

The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 1173—Vol. XXVIII.]

LONDON, SATURDAY, FEBRUARY 13, 1858.

(WITH SUPPLEMENT) { STAMPED . . . SIXPENCE.
UNSTAMPED . . . FIVEPENCE.

M. R. JAMES CROFTS, MINING AND SHAREBROKER,
No. 1, FINCH LANE, LONDON (established 14 years), TRANSACTS every
kind of BUSINESS IN MINING SHARES, but, not being a DEALER, BUYS and SELLS
only on orders confided to him.
Mr. Crofts recommends immediate attention on the part of buyers to the following
mines, in connection with their late and present prices. Such an opportunity as the
present time presents for investing in CHEAP SHARES probably never occurred,
and may be long before it will occur again:—

DIVIDEND MINES.		Last dividend.	
Former price.	Present.	Bi-monthly or quarterly.	
Providence	250	250	0 0 0
West Basset	35	25 25	0 0 0
Vale of Towry	35	25 25	0 0 0
Trelawny	35	25 25	0 0 0
Wheal Basset	300	240 250	4 0 0
Drake Walls	34	2 24	0 2 0
Kitty (Leland)	23	14	1 0 0
Tinctor	6	4	0 5 0
Wheal Buller	350	340 350	7 10 0
St. Day United	23	23 6d.	0 1 0
Par Consols	23	23	1 10 0
Herodfoot	13	7 1/2	0 13 6
Wheal Margaret	70	62 1/2	2 0 0
Ding Dong	43 1/2	15 16	1 10 0

SPECULATIVE AND PROXIMATE DIVIDEND.		Former price.	
Former price.	Present.	Former price.	Present.
Wheal Edward	10 1/2	8 1/2	11
East Russell	20	4 1/2	20
Wheal Alfred	16 1/2	5 1/2	21 1/2
West Hwas	1 1/2	21 1/2	22 1/2
North Frances	25	10 11	8 1/2
North Levant	5	3 1/2	4

A long list being rather bewildering than instructive, Mr. Crofts offers the pre-
senting as a selection, but without prejudice to many other good mines. The average
position on the above enumerated shares is upwards of 27 1/2 per cent., taking one
share of each mine.

M. R. JAMES LANE, No. 29, THREADNEEDLE STREET,
MINING SHARE DEALER.

JAMES B. BRENOCHLEY,
DEALER IN MINING, RAILWAY SHARES, &c.
11, ROYAL EXCHANGE, LONDON.

TIN AND COPPER MINES.
Mr. PETER WATSON, having for years held the office of SECRETARY to a
TIN SMELTING COMPANY, and had a long experience in the METAL
MARKET, is of opinion that the price of tin, notwithstanding the advance of £10 per
ton during the past fortnight, a further advance of £10 per ton can confidently be an-
ticipated, hence the security to those purchasing shares at the present reduced prices.
Copper also has advanced £10 per ton, and rumours are afloat that a similar rise will
place in a few days. The DIVIDEND MINES will increase their profits, and
one of the PROGRESSIVE MINES will soon be in the Dividend List. A selection,
however, should be made with great care in mines where the reserves are being in-
creased, and not diminished.

PETER WATSON, English and Foreign Stock, Share, and Mining Offices.
57, Threadneedle-street, London, E.C.
Office hours from Ten to Five, and Ten to Two on Saturdays.

INVESTMENT IN MINES.
DIVIDEND MINES pay 20 to 30 per cent. per annum, in payments every two
or three months, whilst PROGRESSIVE MINES, carefully selected, frequently ad-
vance 50 to 100 per cent.

Mr. PETER WATSON, having had 14 years' experience in every department of
mining in Devon and Cornwall, and now a regular correspondence with the best
agents in the two counties, will be happy to ADVISE on application personally, or
BY POST to those who may desire it a list of mines which he can at present with con-
fidence and safety recommend, either for investment, or a considerable rise in price.
Commission.—On the purchase or sale of mining shares, 1 1/2 per cent. on all trans-
actions.
BANKERS: Union Bank of London.

PETER WATSON, English and Foreign Stock, Share, and Mining Offices.
57, Threadneedle-street, London, E.C.
Office hours from Ten to Five, and Ten to Two on Saturdays.

MINE SHARES FOR SALE.

Alfred Consols.	North Roscar.	West Basset.
Bullstock.	Old Tinctor.	West Fowey.
Balnoon.	Par Consols.	West Alfred.
Boiling Well.	Providence.	West Par.
Carnyorth.	Pend-an-drea.	West Wheal Frances.
Ding Dong.	Pendean Consols.	Wheal Basset.
East Basset.	Sortridge Consols.	Wheal Buller.
East Providence.	South Caradon.	Wheal Kitty.
East Trefusis.	South Tolv.	Wheal Margaret.
East Russell.	South Tolv.	Wheal Trelawny.
Great Hwas.	St. Tre's Consols.	Wheal Wrey.
Herodfoot.	South Cudra.	Wheal Edward.
Hingston Down.	St. Austell Consols.	Wheal Grenville.
Herward.	Swanpool.	Wheal Harriett.
Kelly Bray.	Trevelow Consols.	Wheal Luddett.
Lady Bertha.	Trevelow.	Wheal Margery.
Molland.	Tolvadden.	Wheal Tallow.
North Basset.	Vale of Towry.	Wheal Zion.
North Levant.	Virtuous Lady.	

Feb. 12, 1858. Commission on all transactions, 1 1/2 per cent.
MR. LELAND, 4, Cushion-court, Old Broad-street.

TO CAPITALISTS.—RELIABLE INFORMATION may be
obtained on application to the undersigned, in respect of MISCELLANEOUS
SECURITIES generally. BANKS, INSURANCE SHARES, LAND COMPANIES,
MINES (British and Foreign), RAILWAYS, FOREIGN STOCKS, and the PUBLIC
FUNDS BOUGHT and SOLD at the current market prices, and at moderate com-
mission. References given and required. JOHN BATTERS, Stock and Sharebroker.
26, Throgmorton-street, London, E.C.

M. R. E. GOMPERTS HAS BUSINESS IN—

10 Alf. Con., £12 1/2.	2 Rosewarne, £27 1/2.	20 East Falmouth.
15 Trewatha, 25s.	1 Wheal Buller, £25s.	1 Basset, £250.
20 Redmoor, 4s. 6d.	30 Harriett, 15s.	10 Calstock Consols, £4 1/2.
20 Gouanens, 4s.	10 Trelawny, 25s. 6d.	50 Vale of Towry, 25s.
10 Wheal Wrey, 4s.	20 Devon Buller, 12s. 6d.	50 Gwanton, 15s.
10 Leland, 4s.	10 Tolvadden.	50 Wheal Zion, 16s.
60 Bertha, 21s. 6d.	50 East Tamar.	100 West Grenville, 4s.
1 Margaret, 6s.	75 East Russell, 4s.	25 Kelly Bray, 4s.

3, Crown-court, Threadneedle-street.

HENRY GOULD SHARP, 32, POULTRY, LONDON, E.C.,

has the following SHARES FOR SALE, or any part, at net prices:—
50 Angarrack Cons., 20s. 100 Great Caradon, 10s.
10 Buller and Bertha, 4s. 200 Hockworthy Bridge, 6s.
10 Bedford Cons., 4s. 6d. 20 So. Bog (Lim.), 10s. 6d.
10 Carn Vivian, 25s. 200 Molland, 11s. 150 Unit. Mines (Pay.), 3s.
10 Carn and Jane, 8s. 6d. 50 Nant and Penrh., 26s.
10 Castell, 6s. 100 Nether Heath, 9s. 9d. 40 West Crinns, 50s.
10 Chollacott Consols, 4s. 20 Port Phillip, 2s. 3d. 10 Wheal Wrey, 4 1/2 s.
10 Dale (Limited), 10s. 50 Queen of Dart, 13s. 20 Wh. Grenville, 33s. 9d.
10 East Hendon, 7s. 9d. 100 Saloon Omn. (Lim.), 30s.
10 E. Rosewarne, 18s. 6d. 41 paid, 12s. 6d. 150 Wheal Tallow, 6s. 3d.

NOTICE TO THE MINING PUBLIC.

If you want a good investment, and one that will pay well, buy shares in the
GREAT CARADON COPPER MINE, at 10s. per share. There are ten lots opened, all of
them have produced copper ore; high specimens can be seen at my office, which were
taken 5 ft. down. This mine is due east of the South Caradon Copper Mine (which
has paid in dividends £128,000 on the small outlay of £640 only), consequently has
the same rich lodes passing direct through the entire length of the mine.

Another good and safe investment is the HUCKWORTHY BRIDGE COPPER MINE. Buy
one share at 6s. per share; this mine will prove one of the richest mines in Devon.
The cross-course lode of the Wheal Friendship passes direct through the sett, and
the mine has paid in dividends £304,000 on an outlay of £5400. They have a splen-
did lode 8 ft. wide, producing good stones of ore; specimens can be seen at my of-
fice. The shares are well worth buying; every information will be forwarded.

HENRY GOULD SHARP will be happy to receive any buying or selling orders, which
will be punctually attended to. The present time offers unusual facilities for invest-
ing in many sound, well-managed, and legitimate mines, which are certain to pay
present purchasers large profits.

SHARES WANTED at net prices, or any part:—
50 Bryntall, £2 1/2.
50 Kelly Bray, 39s. 9d.
50 Bull. & Bass. Unit., 7s. 10 Leland Consols, £1 1/2.
50 East Caradon. 50 Lady Bertha, 20s.
50 East Trefusis, £3 1/2. 1 Wheal Basset, £205.
50 E. Wh. Russell, £3 1/2. 100 Molland, 6d.
50 Great Alfred, £4 1/2. 30 North Tavy, 13s.

HENRY GOULD SHARP offers his services to ladies, gentlemen, and others having
any capital to invest. He receives the earliest information relative to the latest
movements in the mines, &c., and consequently can give the best advice to those seek-
ing safe and profitable investments.

BANKERS: London and Westminster Bank, Lothbury.

G E O R G E M O O R E,

DEALER IN MINING SHARES.

1, CROWN COURT, THREADNEEDLE STREET.

GEORGE MOORE will sell the following SHARES, or any part, at quoted prices,
FREE OF ANY COMMISSION:—

DIVIDEND.		NON-DIVIDEND.	
5 Alfred Consols.	50 Sortridge Cons., 39s. 6d.	10 Wh. Kitty (Lel.), £13 1/2.	
5 Bedford Consols, 2s.	50 Tamar Consols, 32s. 6d.	1 Wheal Margaret, £70.	
5 Drake Walls, 45s.	10 Tinctor, £4 1/2 s. 9d.	3 Wh. Trelawny, £23 1/2.	
5 Par Consols, £22 1/2.	50 Vale of Towry, 25s. 9d.	5 Wh. Wrey, £4 1/2 s. 3d.	
	1 Wheal Arthur, £3 1/2.		
20 Devon Buller, 15s.	20 East Russell.	20 Wh. Grenville, 31s. 9d.	
1 East Basset.	10 Great Wh. Bay, £67 1/2.	5 Wheal Margery, £8 1/2.	
25 East Tamar, 18s. 6d.	15 North Downs, 77s. 6d.	50 Wheal Zion, 17s. 6d.	
	10 Wh. Edward, £7 1/2 s. 9d.		

In any business that GEORGE MOORE is favoured with, in which he is the buyer, he
will give CASH ON RECEIPT OF TRANSFER.

MESSRS. J. J. REYNOLDS AND SON,
No. 1, ROYAL EXCHANGE BUILDINGS, LONDON, E.C. ENGLISH
AND FOREIGN STOCK, RAILWAY, AND MINING SHAREBROKERS, beg to
inform their friends and the public that the present time is a FAVOURABLE OP-
PORTUNITY FOR INVESTMENT in many undertakings of a substantial character,
paying dividends worthy the attention of the capitalist.

Every information can be obtained at their offices, which their practical experience
enables them to give, not only of mines and other properties of established value, but
of those that are not.

MESSRS. POWELL AND COOKE,

8, HERCULES CHAMBERS, OLD BROAD STREET, LONDON.

Messrs. POWELL and COOKE beg to direct attention to the present almost unparal-
leled opportunity for the investment of capital in good DIVIDEND and PROGRESS-
IVE MINES. The former, when well selected, pay at the rate of 15 to 25 per cent.
per annum, in dividends either bi-monthly or quarterly; while the latter class fre-
quently advance several hundreds per cent. in a short period.

Messrs. POWELL and COOKE select the best of parties requiring information
as to mines offering the greatest chances of success, among which are the following:

DIVIDEND MINES.		Vale of Towry.	
Devon Great Consols.	South Caradon.	West Basset.	
Great North Tolv.	South Wheal Frances.	Wheal Margaret.	
Par Consols.	St. Day United.	Wheal Mary Ann.	
Tinctor.	Providence Mines.		

PROGRESSIVE MINES.

Catherine and Jane Con.	Kelly Bray.	Tolvadden.
East Basset.	North Wheal Frances.	Virtuous Lady and Wh. Bed.
East Wheal Russell.	North Wheal Robert.	West Grenville.
Great Hwas.	Portkell United.	Wheal Par Consols.
Great Wheal Alfred.	Redmoor.	Wheal Edward.
	South Carn Brea.	Wh. Kitty (St. Agnes).

Messrs. POWELL and COOKE will transact any business entrusted to them, either at
net prices, or on commission of 2 1/2 per cent.—Dated Feb. 12, 1858.

JAMES HERRON has FOR SALE the following SHARES, at the

prices quoted, and FREE OF COMMISSION:—

20 Bryntall, 39s. 9d.	5 Hing. Down, £5 1/2 s. 9d.	5 St. John del Rey, £12 1/2.
10 Bolling Well, 28s. 9d.	20 Holmshurst, 28s. 6d.	1 South Caradon, £37 1/2.
30 Cath. and Jane, 7s. 9d.	2 Kitty (Leland), £14 1/2.	5 St. Aub. & Grylle, £4 1/2.
10 Cefn Brynwy, £11.	10 Kelly Bray, 45s.	50 So. Conduarow, 3s. 10d.
30 Chollacottville, 2s. 3d.	4 Leland Consols, 10s.	10 Kassar Consols, 22s. 9d.
30 College Mines, 2s. 9d.	20 Lewi, 35s. 6d.	1 Tramper Consols.
50 Castell, 5s. 6d.	20 Lady Bertha, 21s. 9d.	5 Tinctor, £5 1/2 s. 9d.
10 Drake Walls, 45s. 6d.	20 North Trelawny, £3 1/2.	20 Trewatha.
1 Devon Gt. Cons., £47 1/2.	20 North Tavy, 14s. 9d.	5 Vale of Towry, 25s. 9d.
20 East Tamar, 18s. 9d.	20 North Basset, £10 1/2.	5 Wheal Wrey, £5 1/2.
10 East Trefusis, £4 1/2.	20 North Downs, 26s. 9d.	10 Wheal Capid, 3s. 10d.
6 East Wh. Rose, £7 1/2.	3 Penance, £10.	1 Wheal Margaret, £69.
1 Forest.	10 Pen-an-drea, £2 1/2 s. 9d.	1 Wh. Mary Ann, £47 1/2.
1 Granb. and St. Aubyn, £117 1/2.	10 Pendean Consols.	5 Wheal Edward.
5 Great Alfred, £5 1/2.	1 Pendean Consols.	5 West Basset, £25 1/2.
20 Gargre, 8s. 9d.	1 Rosewarne, £27 1/2.	10 West Grenville, 4s. 10d.
20 Grenville, 31s. 6d.	20 South Bog (Limited),	3 West Sharp Tor.
20 Great Hwas, 20s. 9d.	Shropshire.	5 Wheal Margery, £8 1/2.
		50 Willow Bank, 11s. 9d.

When Mr. HERRON stated in the Mining Journal of the 9th January that money
would soon become a drug in the market, many thought him too sanguine; such,
however, is now the case, and the great difficulty with brokers at present is to find
shares to execute their orders in sound dividend and progressive mines. This should
not create surprise, for who would sell the description of stock to invest the proceeds
in Consols at 96, or lodge it on call with the joint-stock banks, to receive only 2 per
cent. When it is considered that two large channels of investment are no longer fa-
vourites with the public,—viz., railways and joint-stock banks,—it is fair to presume
that greater attention will be directed to British mines, as their merits are daily be-
coming more extensively known and better appreciated.

Mr. HERRON recommends the following Dividend Mines, which, on the average,
will pay 17 per cent.:—West Seton, Vale of Towry, South Caradon, Devon Great Con-
sols, North Basset, West Caradon, Granbier and St. Aubyn, Drake Walls,
Tinctor, Wh. Mary Ann, &c. And the following sound Progressive Mines:—Wheal
Margery, Kelly Bray, North Downs, St. Aubyn and Grylle, Lewis, West Grenville.

2, Adam's-court, Old Broad-street, London, Feb. 12, 1858.

MESSRS. VIVIAN AND REYNOLDS, MINE AGENTS,

68, OLD BROAD STREET, LONDON, E.C.

Messrs. VIVIAN and REYNOLDS are enabled, through the long experience of Mr. W.
C. Vivian as an underground agent and manager of mines in Cornwall, and in various
foreign countries, to afford information on most important mining districts; and to
inspect and report on mines. They are also enabled, by the several years' acquain-
tance of Mr. J. J. Reynolds, jun., with the transaction of the London share market, to
obtain every advantage for those who may want either to buy or sell mining or any
other description of stock.

Messrs. VIVIAN and REYNOLDS have daily information from the principal seats of
mining, which is at the service of those who may honour them with their confidence.

M. R. LINTHORNE, ENGLISH AND FOREIGN MINING

AGENT, 3, ADAM'S COURT, OLD BROAD STREET, LONDON.

BUSINESS TRANSACTED in all ENGLISH and FOREIGN MINES, and other
SECURITIES, on the usual terms of commission. Information afforded in respect
to Dividend-paying and Progressive Mines.

MINE SHARES FOR SALE.

10 Alf. Con., £12 1/2.	10 Tinctor, £4 1/2.	20 Kelly Bray, 43s. 9d.
1 Carn Brea, £31.	1 Margaret, 26s.	20 North Downs, 27s. 6d.
1 Craddock Moor, £42 1/2.	100 Redmoor, 7s. 6d.	10 North Frances, £10 1/2.
2 Ding Dong, £21.	10 Tolvadden, 57.	100 North Tavy, 15s. 6d.
10 Drake Walls, £2 1/2.	10 Copper Hill, £20.	100 North Trelawny, 15s.
1 Granbier, £12 1/2.	20 East Alfred, £2 1/2.	100 Pendean, 24s.
5 Par Consols, £21 1/2.	50 Devon Buller, 15s.	100 Sortridge, 28s. 6d.
1 South Tolv., £100.	1 East Basset, £105.	10 Wheal Wrey, 4s.

250 Vale of Towry, 27s. 6d. 20 East Russell, 24 1/2 s.

50 Gt. Wh. Alfred, £3 1/2. 100 Great Hwas, 20s.

Apply to Mr. W. MICHELL, 3, Austin Friars, London, E.C.—Feb. 12, 1858.

MR. GEORGE BUDGE, of 4, BIRCHIN LANE, CORNHILL,

LONDON, has SHARES FOR SALE at the following prices:—

30 Gt. Wh. Alfred, £4 1/2.	25 Grenville.	20 Kelly Bray, £2 1/2.
10 Wheal Arthur, £3 1/2.	25 Tamar Consols, 25s.	25 Calstock Consols.
1 Wheal Buller.	1 South Caradon.	20 Wh. Kitty (St. Agnes).
50 Wheal Zion, 19s. 9d.	100 Castell, 6s.	5 Pendean, 24 1/2 s.
10 Gt. South Tolv., 47.	50 Trewatha.	5 Par Consols, £21 1/2.
50 Vale of Towry, 30s.	100 Wheal Harriett, 15s.	1 Devon Great Consols.
3 Wheal Margaret.	5 Wheal Kitty (Leland).	50 Bolling Well.
10 North Frances.	1 Wheal Basset.	2 West Caradon.

MR. J. T. KEVERN'S MINING, LOAN, AND DISCOUNT

OFFICES, PENANCE (Established 1845).

Bankers (from 1838)—Messrs. Batten, Carne, and Carne.

MANGANESE.—SOCIÉTÉ GÉNÉRALE DE MANGANESE,

REHRENBREITSTEIN.

AGENT—H. SCOLEFIELD, 6, Sandhill, Newcastle-on-Tyne.

MESSRS. A. J. HUTCHINGS AND CO.'S

PATENT IMPROVED WIRE ROPE.

SOLD MAKERS TO THE

LORDS OF THE ADMIRALTY, THE FRENCH AND TURKISH GOVERNMENTS,

And the principal Colliery Proprietors throughout the kingdom.

MANUFACTORY, MILL WALL, POPLAR, LONDON.

ROUND and FLAT ROPES of every description, suitable for mining operations or
other purposes, GALVANISED or UNGALVANISED, MANUFACTURED upon
the newest and most improved machinery, ensuring greater pliability, durability,
and strength; and is admitted by the principal coal proprietors to be far superior to any
other kind of wire rope. The superiority of these ropes over hempen ones, in point
of strength, lightness, durability, and cost, is admitted by all who have tried them.

GUIDE ROPES, SIGNAL CORD, LIGHTNING CONDUCTORS, &c.

VALUABLE DIVIDEND, FORFEITED, AND OTHER MINE SHARES,

FOR ABSOLUTE SALE.

—(4096ths) Shares in Trewatha Lead Mine, forfeited for non-payment of calls.

—(2000ths) North Downs Shares, forfeited for non-payment of calls.

1 (496th) South Frances, paying regular bi-monthly dividends of from £7 to £10.

1 (25th) West Caradon Copper Mine, paying from £2 to £5 bi-monthly dividend.

2 (1000ths) Carn Brea Copper and Tin Mine, paying regular dividends, and likely
to improve.

1 (25th) Wheal Buller Copper Mine, paying £7 10s. bi-monthly dividend.

10 (4096ths) Wheal Edward Copper Mine, about to commence dividends.

20 (4000ths) East Wheal Russell Copper Mine, very promising, making profits, and
likely soon to be a dividend mine.

5 (1024ths) East Wheal Buller Copper Mine.

1 (25th) Copper Hill Mine, adjoining Wheal Buller.

3 (512ths) Creegbrasse Tin and Copper Mine.

10 (—) Wheal Henry Tin and Copper Mine.

2 (400ths) Wheal Lovell Tin Mine.

2 (240ths) Wheal Reeth Tin Mine.

100 (2048ths) Kenneggy Copper Mine.

M. R. T. P. THOMAS has instructions to SELL, BY PUBLIC

AUCTION, at his Offices, 2, Crown-court, Threadneedle-street, London, on

Friday, the 19th inst., at One o'clock precisely, the above valuable SHARES, all of
which he can confidently recommend for investment and speculation. The great ad-
vance in metals, with every prospect of further advance, and the cheapness of money,
must make mining the best speculation for 1858.

Catalogues may be had of the auctioneer; and of Mr. J. W. DUNFORD, No. 57,
Threadneedle-street.

M. R. JOHN R. PIKE, MINING AND SHAREBROKER,

3, PINNER'S COURT, OLD BROAD STREET, LONDON.

WILLIAM MARLBOROUGH, MINING AGENT,

(For many years with Mr. T. P. Thomas),

CORNISH MINE PHOTOGRAPHS—No. XXVI.

"GWENNAP PIT."

A celebrated statesman and writer has said, "Tell me the amusements of a people, and I will tell you their peculiar characteristics." There is great shrewdness in this remark decidedly, for much may be gleaned of their idiosyncrasy as developed in their social enjoyments. If the Cornish, as a people, are to be judged of by this standard they will have a good position awarded to them for humanity and kindness, to which they are undoubtedly entitled; still it must be confessed that a great deal of the old leaven of superstition is to be found lurking in what would appear at first to be refined and strictly religious observances.

There is so striking a resemblance not only in language but in habits and customs of the Cornish and Welsh people as would indicate they were originally descendants of the same stock; both pride themselves as being the legitimate representative type of the ancient Britons; how this may be we know not, certain it is, however, that formerly both were servile victims of superstition. Though fairies, piskies, devils, ghosts, death-bed tokens, signs, and other popular fallacies still have their votaries, yet at the present day they are at a far greater discount in the dukedom than in the principality. From the towns these preposterous follies are nearly banished, as well as from amongst the more intelligent of the mining village population. Education, and the improved style of modern pulpit declamation, has undoubtedly contributed much to this desirable end in our western districts. Under the former dreadful influences the Mormons have probably made more converts to their monstrous and blasphemous system than amongst any section of people in these kingdoms. By the same aid Johanna Southcote was successful amongst the most ignorant classes of the benighted and barbarous parts of Yorkshire and Wales; but in the county of Cornwall neither of these "churches" (heaven save the mark) ever took root or had an abiding place.

John Wesley was the man of and for his day. Born, as it were, for the period, he with profound wisdom directed and made use of the popular prejudices, and sought thereby to convert error into truth. Using the force of self-reasoning on their own premises, he encouraged their belief in things unseen, unknown, and unfelt by many; he taught that there were moments of pure happiness enjoyed in this world by the virtuous character the vicious could never attain; and exhorted them to repentance by the call of the divinity implanted in every man's breast, endeavouring to inculcate Pope's beautiful verse—

"What conscience dictates to be done,
Or warns me not to do,
That teach me more than hell to shun,
That more than heaven pursue."

He, with fervour and assiduity, as remarkable for their power as for their rarity, pointed to the dictates of that "still small voice," and portrayed to the until then neglected population, with an earnestness and zeal hitherto unknown, the fearful consequences of the Divine wrath, and the folly and danger of wrestling with God by resisting his impulses; for the subjects of his discourses taking the most impressive texts of scripture. At first, this minister of good was treated with ridicule, indignity, and persecution; but a mighty change was at hand: the good seed fell into good ground; a few converts to the new teaching were made; these became consistent members of society, instead of the reckless, rough characters they had previously been. Of these some were selected by Wesley to further the important work he had undertaken; this was a great and politic step towards the rapid progress soon afterwards made. Chapels sprung up on every side; the simplicity of prayer, without the monotony and repetitions of our otherwise beautiful Church service, the constant change of ministers, the adopting more convenient hours of worship, the shortening the services, the change to an entirely new system of psalmody, in which all could enter, the fervour and inspiration of extemporaneous prayer and preaching, in contradistinction to the apathy of the clergy; and, in some cases, the novelty, in others the fashion, drew vast congregations, amongst whom were many

"Fools who came to scoff remained to pray."

To such assemblages as these, and from such causes, the celebrated meeting at Gwennap Pit owes its origin. On great occasions, such as holidays and festivals, the crowds were so great that no rooms or buildings were sufficiently capacious to contain a tithe of the concourse. Hence the necessity of out-door services, of which the subject of our paper is the most remarkable and most popular.

In bringing his congregations together on such occasions, Mr. Wesley had a happy method of selecting situations as impressive as possible from some grand natural peculiarity, to which, in his eloquent discourses, he could effectively refer for evidences of Almighty power and design, and which, under such circumstances, told with astonishing effect on these sons and daughters of toil, so little accustomed to practical illustration. Near St. Michael's Mount is a large rock, called the Chapel Rock, or, sometimes, Wesley Rock. On the sea shore, or sandy beach at its foot, is the spot on which thousands have listened to his preaching from the eminence on such topics as the miraculous draught. His audience were, two-thirds of them, perhaps, poor fishermen and tanners. With what thrilling effect would—"I will make you fishers of men" fall on their ears in so appropriate a place! Whilst preaching in the midst of the sublime but wild scenery at the Land's End, standing on the hill immediately behind the then extreme and tapering point, he is said to have extemporised the simple and beautiful hymn commencing—

"Lo! on this narrow spot I stand,
Betwixt two roaring seas."

Lanyon Quoit (a druidical altar in the parish of Madron, in the neighbourhood of which are many stone circles, said to be temples of these ancient priests) was also a favourite resort. Here, in the wilderness, did this pioneer of the word of truth, with striking success, contrast with power their idolatry and licentious practices with the pure and holy doctrine of which he was the herald! But at no place did then, or do now, so vast congregations assemble, or is the original character of the scene so strictly preserved, as at the Gwennap Pit. Here now, as heretofore, on Whit Tuesday do thousands on thousand meet to hear the word of God preached forth under the glorious canopy of His heaven only.

Gwennap Pit is so called from the peculiarity of its form—a vast amphitheatre; probably, indeed, it is the remains of some old surface mining operations. The slopes all round, but in one place, consist of a series of steps, or rather seats, covered with sods, accommodating many thousands of hearers, by whom the preacher can be tolerably well understood when the services commence, as all is breathless attention; solemnity itself hushes all buzz or sound. As may be supposed, from the circumstances narrated, and from its being situated in the very heart of the great mining district of Cornwall, this is essentially the "miners' meeting." It is considered, and is in fact, one of their peculiar institutions, therefore should not be omitted in a description of the habits and characteristics of the mining population; this being *de facto* a mining service in every feature of the word. The preacher has abundant evidence on the spot on which to dwell; the wonders of His Almighty creation, as the miners in their daily work experience; and when dilating on the uncertainty of life, an appeal to the fact of the dangers of mining finds a response in hundreds of bosoms who have lost, as nearly all have, some friend or relative in the dangerous profession! No wonder, then, Gwennap Pit is so much held in reverence by miners, and the services looked forward to, and attended, with so much interest. Many days beforehand preparations are made by the surrounding neighbourhood to accommodate the crowds who visit St. Day (a very large mining village, near which the Pit is situated). Still, all cannot be accommodated: many, knowing this, bring life's substantial with them. From early morning, at which prayer services commence, until about ten o'clock, streams of pedestrians, equestrians, and vehicles of every sort, size, and description, pour in, as one unbroken tide, crowding every road and approach, each endeavouring to secure good situations. Within a radius of twenty miles foot passengers repair by hundreds; the choirs of the different chapels bringing their musical instruments to swell the chorus. As they walk they practice the hymns appointed for the services, this serving as a solace during their journey.

Custom has made this day more observed than any of the parish feasts or local institutions, to the entire exclusion of all the ancient Whitsuntide sports, save wrestling. This truly Cornish miners' game, year by year, is fast also falling into disuse; the people evidently preferring the quieter and more refined sphere of life. One great inducement to this change is the amazing number of young men who, from sobriety, correct demeanour, with a little self-respect and self-culture, aided by competent practical experience, have raised themselves to comparatively high situations as mine captains and agents, not only in their native county, but in nearly every mining part of the globe.

In Cuba, Mexico, Lima, Coquimbo, Jamaica, Australia, Isle of Man, Ireland, Yorkshire, and Wales, large numbers of managers and skilled la-

bourers spring from this class of persons, who carry into those distant climes many of the practices and impressions received at such meetings as the "Pit." True, many sent out perish from that bane of the miner—drunkenness. This to them is far more fatal than the miasma of the swamp, or the blaze of the noonday tropical sun; yet even this is in some measure evidently yielding to the force of example and precept. This injurious custom is not carried to anything like such an extent by the agents and captains as it was only a few years since; their influence exerts itself more powerfully amongst the men than would appear to the eye of the casual observer, but to those who know their characters it is evident and palpable, and the total abstinence movement has a host of followers in this county. As may be supposed, a batch of this society's lecturers are to be found at St. Day on the Pit anniversary, urging with all the vehemence and rhetoric that they can command the grand advantages of temperance. Here, too, may be found the active representatives of the various sections of dissent from Methodism; but the "old connection" still does, and probably always will, command a vast majority over the schismatics; old associations, and the memory of their founder, naturally lead to it. To witness so many thousands of these rough, hardy sons of toil and danger for that day resigning their work and their wonted amusements to assemble in the rude temple of the Pit, for the purpose of Divine worship (whether sincerely or not is not for us to say), is a grand sight, which cannot be contemplated without emotion and awe. At the commencement of the services, when the preacher gives out the hymn, the chorus of praise which ascends from so many well-trained voices pleases the ear, and thrills through the soul of the contemplative, raising its aspirations, and fitting it for the higher and more exalted duties of prayer and admonition.

The regular services are pretty much the same as those practised in their chapels, except that they extend over longer periods. The season of the year, in a climate so mild as that of Cornwall, renders this out-door preaching not only more practicable, but more pleasurable than being pent up in a large building; whilst the voice of the minister is better heard, not being lost or confused by echo or reverberation. The utmost solemnity and silence prevails; indeed, figuratively speaking, a pin might be heard drop.

Ministers of more than ordinary ability and celebrity usually officiate; the congregation consists principally of persons engaged in mining operations, with their families, in their best attire, who at an early hour of the evening retire, the younger branches to amuse themselves as they are wont, and as we have previously described. We say again, to see these people in all their phases, and to form a just appreciation of their character, it is necessary to accompany them in their amusements and devotional exercises, in public and in private, when we hesitate not to say the practices described in our paper will be admitted to be infinitely superior to those prevalent twenty or thirty years since, at which period badger-baiting, cock-fighting, wrestling, and such brutalising sports were in vogue.

We would advise those who have not done so to visit our Pit Day, for they can scarcely be said to have experienced the Cornish institutions without doing so: they will see for themselves, and rejoice that the people prefer the quiet, edifying, and certainly more rational and refining influences they obtain, by spending their holiday, as detailed in this paper, at the "Gwennap Pit."—GEORGE HEYWOOD.

Original Correspondence.

THE STEAM COAL ASSOCIATION AWARD.

SIR,—In your last week's Journal, Mr. John Lee Stevens would appear to complain of an "unfair bias," either in the appointment or the proceedings of the professional agents, as he calls them, and not arbitrators, as he states they were called in the *Times*. I think I can put him right, if his injured feelings will allow him to re-read the advertisement which offered a reward of 500*l.* for the best method of preventing smoke in multitubular boilers, and more especially in reference to boilers in use in steam-vessels. Three gentlemen were selected by the body of coal proprietors who offered the 500*l.* reward, for the purpose of deciding to whom it was due. If he will refer to the advertisement, he will see it was in their power to award it to any, or if none were satisfactory, to withhold it. The body of coalowners placed a further sum of money at these gentlemen's disposal, for the trial of such plans or methods as appeared most likely to answer the purpose required; and further, that the candidates for the 500*l.* should, if aggrieved by the selection, have the use of the boiler selected to test at their own cost their plan.

Now, I ask Mr. Stevens, could he expect the coalowners to test, at their own expense, the plans of 103 competitors for their 500*l.*, when, in the opinion of the judges appointed by them, only four were likely to be applicable to the peculiar case for which the reward was offered? I will only allude to the reasons he assigns for not availing himself of the offer of a trial at his own expense, or the appeal "from Caesar to Caesar."—1. Because the proposed agents had already tried a plan of their own, so satisfactory to themselves as to make it the basis of future trials. I would ask Mr. Stevens if it was not necessary to try the boiler in every way, to see that it was in the best condition possible, so as to give each candidate or competitor a fair chance, and to institute careful experiments on the ordinary boiler as a test, before trying any plan submitted?—2. Mr. Stevens need not fear to impugn the professional ability of the judges, as doubtless they are perfectly capable of defending themselves. Your correspondent, Mr. Editor, is, of course, aware, as the fact was duly announced in your Journal, that Mr. Williams declined, in the most handsome manner, to receive the reward accorded to him, and offered it as a basis of a fund for annual premiums to those engineers and stokers who worked with the greatest economy. Your correspondent truly states the judges were not appointed as a committee of a public body, scientific, or committee of any sort, nor as commissioners of Government, of whom we have seen enough, but they were appointed by the body of the owners belonging to the Steam Coal Association to test the Admiralty reports, and give away 500*l.* of that association's money.

I do not doubt Mr. Williams will accept Mr. Stevens's challenge, nor do I doubt that the use of the boiler will be allowed by the body of coalowners—the loser to pay all costs, and the judges appointed one by each party, and an arbitrator by the two judges.

St. Austell, Feb. 8.

AN ANTI-(CARBONIFEROUS) SMOKER.

BLAENAVON IRON AND COAL COMPANY.

TO THE SHAREHOLDERS OF THE BLAENAVON IRON AND COAL COMPANY.

GENTLEMEN,—At a meeting of the shareholders of this company, held at the London Tavern, on Jan. 27, I was sorry to see the factious opposition shown to the directors on that day (for I can call it by no other name); at the same time, I can make allowance for the loud complaints against the unsuccessful endeavours of the directors to make it a paying concern. About the year 1836 the company was formed, with a paid-up capital of 400,000*l.*, in 8000 shares of 50*l.* each. The leasehold and freehold property was purchased of Messrs. Hill and Wheeley for the sum of 200,000*l.* The plant, engines, and machinery cost 68,000*l.* There was also a mortgage of 70,000*l.* charged on the property, which said sum was to be paid by annual instalments by the shareholders, making a total of about 360,000*l.*, leaving only 40,000*l.* as a working capital. The directors, thinking they could enlarge and improve the works, laid out the sum of 80,000*l.* in partially erecting three new blast-furnaces, excavating for a mill and forge, and sinking pits, &c., which said works were not completed, and are now unproductive. They also made an outlay in repairing and improving the old works, making new roads, inclines, &c., at a cost of 80,000*l.*

In order to raise funds for this great outlay, it was found necessary to borrow money for the purpose: 20*l.* scrip shares were offered to the shareholders, but few took them. Debentures bearing 6 per cent. per annum were issued, and a large amount of them were taken, payable in seven years. The whole amount was not sufficient to complete the intended improvements. They also paid the sum of 7000*l.* annually in reduction of the mortgage, making a total outlay of upwards of 520,000*l.* during the last 20 years. Now, I would ask any reasonable man, how could it be expected that with an annual average make of 20,000 tons of iron (the profits, which cannot be large, considering the precarious state of the iron trade) any dividend could have been paid to the shareholders? The extent of the Blaenavon property is about 12,000 acres; the most part of it contains an inexhaustible supply of coals, ironstones, and limestone. Capital alone is required to ensure success. No one can question the capability of the property; in fact, all practical men say there is not the like of it in the mineral basin of South Wales.

During the last four years, three new directors have been elected by the

shareholders; they being thorough practical men of business, immediately investigated the affairs of the company, and decided that before any dividend was paid they, as honest men, should pay off their debts (nothing more reasonable). In consequence of that resolution, some of the shareholders naturally got discontented, and raised an outcry that other directors might be elected. Some wishing to wind-up the concern at once, the directors refused to entertain the proposition of the minority. The directors, some time since, were called upon to pay up a large amount of debentures overdue; also to pay off the remaining part of the mortgage—a difficulty which they were unprepared for at the time. They, however, got a person to advance 50,000*l.* by way of mortgage, but before they could have it they were obliged to become personally responsible for the 50,000*l.* They did so, and eventually they asked the shareholders to bear the responsibility with them. The majority refused, consequently the present Chairman is the only responsible person at the present time, the old directors having resigned. He has for the last two years been urging the shareholders to subscribe more capital, to pay off the obligation. Meeting after meeting was called; no feasible plan was proposed; it all ended in nothing being done. At the last of the said meetings only 1300*l.* was offered by the shareholders. In the meantime, the mortgagee gave notice for the immediate payment of his claim; also several debenture holders pressed the directors for immediate payment, rendering the responsibility of the directors a most disagreeable affair (the small pittance they receive of the shareholders is only 200*l.* per annum each). They naturally say to the shareholders, as you will not furnish us with capital for carrying on the works, and paying off the responsibility resting upon our shoulders, you ought to give us a reasonable sum for our influence and exertions.

A meeting was held for that purpose in December last, and a resolution to that effect was proposed, that the four directors should receive 5000*l.* per annum. Another meeting was called on Jan. 27, and the said resolution was carried by a large majority. A most determined opposition was made by the minority, and threats of putting the concern into Chancery.

Brother shareholders, I now beg to tender you my advice. I have resided in Blaenavon for the last 25 years, and am intimately acquainted with the value of the property. I would advise you by all means to go hand in hand with the present directors, for I am confident that a more practical lot of men cannot be found. The improvements they have made and are making will be for the general good of the concern. They have the greatest stake in the affair, for they hold 5000 out of the 8000 shares; they contemplate raising sufficient capital to complete the half-finished works, and to erect a mill and forge, with a variety of other improvements, which, when done, we hope in a few years will raise the shares to par. Blaenavon is an El Dorado, if capital and energy are applied.

J. G. WILLIAMS.

THE TORBANE HILL MINERAL.

SIR,—From what has been published, it appears that the majority incline to the view that this problematical mineral is neither coal nor a species of coal. I am of a contrary opinion, maintaining the following argument, which I consider the only admissible one. Formerly, and indeed, frequently at present, minerals were classed into systems according to their outer physical and mathematical features, and it appears that mineralogical science, though based upon chemical principles, has not yet entirely stripped itself of its primordial and deficient state. The progress made in chemistry since Werner's time continually tends to rectify the old system of mineralogy. Chemistry has aided in uniting the whole mineral kingdom into one uninterrupted chain, which approaches completeness. As far back as 1811 the great Berzelius pointed out how closely the links of this mineralogical chain are in connection with each other. He says that if we represent to ourselves chemistry in a state of perfection subjected to a systematic arrangement, it must give us a description not only of the combinations which our investigation has discovered to be produced by nature, but it must also teach us all those which may hereafter be discovered as such, together with all those which are possible, though they never can make their appearance as fossils in the earth. This complete chemistry should be the frame of a system of mineralogy, the one containing mineral, and if so, the different forms in which it is produced, the foreign ingredients by which it is usually rendered impure, or which may be mechanically blended with it; so that the province of chemistry extends beyond our laboratories to the great and astonishing workshop of Nature. Taking a branch of this perfect chemistry containing all that relates to the combinations which appear as minerals, we have mineralogy in its perfect state. The circumscribed amount of knowledge which one man can make himself master of has probably been the cause of mineralogy being considered as a separate science; but it is evident that it must go step by step with chemistry, and that every revelation in chemical doctrines must extend the boundaries of both. Again, if mineralogy is itself merely a branch of chemistry, it is clear that it can have no other scientific foundation for its arrangement than a chemical one, and that every other is altogether foreign to mineralogy as a science. The prevailing theory and arrangement, therefore, of chemistry must be, for the time, also that of mineralogy. If this has not hitherto been the case it must be attributed to the recent period during which chemistry has received its greatest improvements, and to the circumstance that the framers of systems of mineralogy have not previously applied themselves with equal zeal and success to chemistry, and consequently are unable to perceive the necessary connection between them.

Taking Berzelius's views as a basis, the definition "mineral" as usually given requires enlargement, which I would give thus:—"Minerals are all those natural products which by chemical laws formed themselves into and became inorganic substances." By this or a similar definition we bind all mineral species more closely together; we avoid unnecessary and unpractical divisions, and are induced rather to unite and simplify than to separate and complicate. If anything is said respecting the majority of mineralogists it would be that in their partiality for mercury, they overture those of mineralogy in the same manner as the discoverers in the latter must extend the boundaries of both. Again, if mineralogy is itself merely a branch of chemistry, it is clear that it can have no other scientific foundation for its arrangement than a chemical one, and that every other is altogether foreign to mineralogy as a science. The prevailing theory and arrangement, therefore, of chemistry must be, for the time, also that of mineralogy. If this has not hitherto been the case it must be attributed to the recent period during which chemistry has received its greatest improvements, and to the circumstance that the framers of systems of mineralogy have not previously applied themselves with equal zeal and success to chemistry, and consequently are unable to perceive the necessary connection between them.

Taking our position upon a chemical system of mineralogy, we cannot fail to find a carbonaceous genus or division, and in this must be placed that in which the carbon is the essential and predominating ingredient. In this genus we find two distinct families, the one containing essentially but carbon, and the other such minerals as are combinations of carbon with hydrogen and oxygen, both the latter substituting each other. The first family comprises the diamond, 100 parts, or absolutely pure carbon; anthracite, 98 parts carbon and 2 parts foreign admixtures; and graphite, plumbago, 90 parts carbon and 10 parts foreign admixtures. The second family comprises:

Carbon. Hydrogen. Oxygen. Foreign Admixture.

Black coal 80.4 7.3 6.7 5.4

Torbane Mineral 64.3 12.5 18.1 2.9

Brown coal 77.1 4.2 15.1 2.6

Lignite 54.9 2.8 19.3 23.3

Asphaltum 88.6 1.6 9.7 —

Succin. resin 80.6 7.3 6.7 5.4

Mineral tar, naphtha, 72.0 14.8 9.9 —

black mineral resin 24.8 5.2 — —

Iridaline 24.8 5.2 — —

Between black coal and brown coal there are so many grades that it is frequently difficult to distinguish to which class a given mineral belongs—the black coal can be traced until it imperceptibly changes into a species of brown coal, and vice versa. The chemical nature and external character of the mineral changes in precisely the same manner. The black streak changes into brown, the lustre gradually disappears, the specific weight and hardness are subject to equal change, and the chemical composition of the mineral plays within certain limits which are never overstepped. As the value of everything is estimated by its useful properties, which properties solely depend on its chemical nature, it is evident that its chemical nature must be ascertained to arrive at its value. The question then presents itself, What minerals do the chemical mineralogist denominate coals? The reply is—Coals (whatever name may have been chosen from localities, physical characteristics, special properties or special uses) are those minerals which consist of carbon and hydrogen, carbon being the main ingredient, while hydrogen may exchange partially or wholly with oxygen, and even with nitrogen in some cases. Further, it must be remarked that the hydrogen and oxygen never unite in such proportions as to form water; that coals contain a predominating portion of the carbon over the other ingredients taken together, and that the coals contain a certain variable proportion of what is called ash. If we seek other minerals exhibiting similar natures and characters to the coal family, we find the quartz and carbonate of lime, but I shall abstain from entering upon details of this comparison.

I before said a mineral was valued according to its chemical nature, and on this account we use coals for fuel, gas, oil, tar, &c., so that one cannot argue, either theoretically or practically that coal is of use for its carbon alone, tar alone, gas alone, &c., but the natural and practical decision is that it serves for one purpose alone, and that others may use it for several purposes; and coal is valuable as regards its percentage of carbon according to the use for which it is required—thus different percentages would give the preference to different properties, and we may reason that neither the name given to a mineral, the locality where it is found, nor any other reason or authority in the least restricts us from using one or other of its useful properties. Thus we may use black coal consisting of 90 per cent. carbon and 10 per cent. hydrogen to make coal oil, for making coal tar, spirit of tar, and if profitable for any reason may use the coal tar to extract the paraffine from it. There is but a small difference in the chemical contents of coal oil and paraffine respectively, and if it happens that a certain mineral of the coal family is better adapted for making paraffine than black coal for instance, it would be injudicious to make a controversial choice; we may, therefore, argue that a person may use the Torbane Hill mineral, which according to chemical-mineralogical argument belongs to the coal family, for the purpose of making paraffine also. Thus it is that some manufacturers of paraffine employ brown coal, and others employ peat. The name "coal," indicating the purpose of burning for the sake of heat, signifies at present nothing, for that name was given when its other properties were not at all, or indifferently, known.

It appears, then, that, whether considered in a scientific or practical manner, Torbane Hill mineral is a carbonaceous mineral, which probably finds its place between the black coal and the brown coal. It is reported that the Torbane Hill mineral contains 25 per cent. of argillaceous residuum, besides 75 per cent. of paraffine. The main chemical nature of this mineral is not in the least altered by containing more alumina than silice, or by containing even pure alumina in lieu of silice. When speaking of coals it is universally admitted that the residuum, or non-burnable stuff, is the ash. If a mineral is a coal whether containing 50 or 90 per cent. of carbon, it remains a coal whether it contains 1 or 25 per cent. of ash. If these 25 per cent. of ash were pure alumina, out of which some one would choose to make fire-bricks or aluminum metal, that would not alter the character of this mineral

belong to the carbonaceous or coal family. If I rightly recollect, the Torbay Hill mineral has been viewed in reference to its geological bearing. I believe a coal seam is found wherever it is found, just as a crystal of calc spar remains so whether in the oldest or latest geological formation. It is well known that the coal measures are in one and the same country of different geological ages, and I believe that no geologist will maintain that science has, in reference to the coal formations, arrived at its definitive end.

In reference to the physical appearance of this mineral, I may mention that I happened to see a specimen of it, and when asked what species of mineral it should be called, I replied (without hesitation, and without knowing that a law suit was about to be commenced) that it appeared to be a kind of coal between black coal and brown coal.—*Tyndrum, Criff, N. B., Jan. 25.*

C. H. GUSTAY THOST.

MINERAL RESOURCES OF NEWFOUNDLAND.

Sir,—Herewith you have a copy of a report, furnished by Prof. Shepard, relative to a lead mine in Newfoundland, and as it fully corroborates your correspondent, Mr. F. N. Gisborne's, opinions as to the mineral resources of that colony, it may, doubtless, interest your readers:—

I have visited the La Manche Lead Mine, located by the New York, Newfoundland, and London Telegraph Company, on the eastern shore of Placentia Bay, Newfoundland, and am highly gratified to lay before you the following, as the result of my examination.

This mine is in a rose-colored vein of soft calc spar, accompanied by a persistent pyritic wall or elvan, which seems to have made a way for the spar vein and lead within it. Both the vein and the elvan side out their way in a line nearly vertical down through the slightly-dipping metamorphic slates to an unknown depth below the level of the sea on which the mine is situated. The rock formation appears to be of the metamorphic or altered lower Silurian, a formation known by experience to be very favourable for the embodiment of large deposits of lead. The vein, instead of its being a limited fortuitous opening, is a distinctly continuous true vein, with numerous droppers or feeders of spar coming in at the top or sides of the ground. The average thickness of the vein will probably be about 2 feet, although in places I have found it to exceed 4 ft. The solid lead ore or galena in the vein I have found varying in thickness from 2 in. up to 8 in., descending beneath the surface to an unknown depth. It has been explored at low tide 100 or 200 ft. from the shore, in which it is found, out in the bottom of Placentia Bay, where I have myself found the ore quite abundant in the form of beach pebbles and sand, as well as in places in the spar vein under the salt water. The cliff where the vein enters it, to the height of 100 ft., and continues that height for 1200 ft., running near the north side of Trinity Bay Brook. In all this distance the vein cuts its way to the surface, and is easily found by the black dirt and red clay that accompany the decayed or partially decayed calcareous spar and loose fragments or boulders of lead ore. About 150 ft. inland the vein crosses Trinity Bay Brook, and enters a mountain 500 or 600 ft. in height. At the foot of this mountain the vein is definitely seen, with its sparry accompaniments. From its strongly marked character, there is good reason to believe that it extends the entire length of the mine tract, in a direction east and west by the compass, the variation being about 27° west at this point in Placentia Bay. There is sufficient water in the brook at all times to drive stamps and wash the finer portions of the ore should it be found necessary. Also, a good supply of air, spruce, and birch for smelting, should fuel be wanted, all immediately at hand, and in great plenty. The practical miner, I have said, is a pink or rose-colored calcareous spar, so brittle and tender that it breaks with a very slight blow of the hammer. I have, however, found at times heavy spar and thin veins or seams of crystalline quartz along the elvan walls; but in upwards of 40,000 lbs. of galena, which have already been excavated, I have not seen one ounce of black jack—nothing but the coarse grained pure galena, often crystallized in very large crystals.

After two or three openings were made along the vein on the summit of the bluff, and found to yield lead very abundantly (so much that my curiosity was greatly excited), I resolved to explore the bed of the vein further inland. In company, therefore, with the superintendent, I proceeded up stream, and soon collected 100 lbs. of water-worn specimens of lead, together with some large lumps lying in the bed of the stream. Subsequently, with the aid of two men, about two-thirds of a day, I dug into the adjacent bank, and took out by weight 1000 lbs.; the largest lump obtained at this time weighed 80 lbs., another 52, another 48, and another 33. The next day we continued the excavation and obtained 1200 lbs. of excellent lead ore, some of which was changed from the sulphuret to the carbonate of lead, or the "dry-bone" of the miners. As length we came upon the vein higher up the bank, and followed it 100 ft. further inland, and found it very rich in galena and carbonate; when all at once the whole vein, side walls and all, settled down as it were by their own weight, or rather by having their foundation below dissolved out, so as to form a sink upon the surface. On entering the sink the vein was found very rich in galena in a state of decomposition, leaving the sides of the depression or cave lined with milk-white carbonate of lead. A series of like depressions follow upon the line of the vein before it enters the high hill or mountain to the east of Trinity Bay Brook. In the lead region of Wisconsin, U.S., I have known 1,000,000 lbs. of galena taken from a single cave or opening of this description. There are certainly strong probabilities of a like deposit here. In one opening made on the bluff, I saw 3500 lbs. of pure galena thrown from the vein by a single blast. It was weighed separately at my request. From my explorations, made with great care and circumspection, I feel confident that you may safely calculate on 100 feet of the vein in depth, above water level, extending 1200 ft. inland at least. I have estimated 4 in. of solid galena as an average thickness there; but believing it better to under-estimate rather than over-estimate, I have taken the average thickness as 3 in., for the 1200 ft. from the land-wash inland, and 100 ft. in depth above the level. This will give 36,000 cubic ft. of solid galena, which is a little more than seven times as heavy as the same bulk of water. A cubic foot of water weighs 62 lbs., and a cubic foot of galena consequently 434 lbs., which, multiplied by 36,000, gives a product of upwards of 1,300,000 lbs., together with the additional chances of quadrupling that amount by sinking below the sea level and extending inland.

The mining is the easiest imaginable, and I see nothing to prevent this mine from yielding on a par with East Wales, U.S., or the great lead deposits of Wisconsin or Missouri, in the United States. I have, in conclusion, to state that this mine is accessible, not only by small boats, but even the smaller class of ocean steamers.—*FOREST SUPERVISOR, Prof. Edmund Geology.*

I have analysed a sample of lead ore for Mr. Ripley, and find it to contain the following:—Lead, 83.04; sulphur, 13.87; carbonate of lime, 1.41; silver, a trace of copper zinc, &c.; silver, .24=100.00.

A portion of the lead obtained by a careful fine assay, was cupelled, and found to yield silver in the proportion of 5 ozs. 4 dwts. to the ton, or 2000 lbs.

JAMES R. CHILTON, M.D.

A FEW REMARKS ON GEOLOGY.—No. II.

Sir,—I strongly question the utility of the assumption in speculative geology, that our earth consisted originally of nebulous or gaseous matter, which, by giving off its heat into space, has been and is undergoing a process of cooling and consolidation, resulting in the formation of a comparatively cool and solid crust, or shell, round an incandescent nucleus; and that to such a condition of our globe must be ascribed most or all geological phenomena observable on its surface; for finding that our knowledge of the geological structure of our globe's surface, and of the phenomena in connection therewith, is clearer and more reliable in proportion as it becomes more difficult to assign and trace them to the existence of such a (supposed) state of things, and in proportion as we are enabled to make use in our investigations of those branches of science which, owing to being founded more on the solid basis of practical observation and clear reasoning than on mere imagination, have made far more progress than the science of geology; and not being able to see how such an assumption could be of the faintest use to the practical miner, I cannot help considering this, and any other similar hypothesis, as a dead weight, that only tends to retard the advancement of science, and to thwart its aim. It is indeed very curious to see, by means of such hypotheses, an imagination comprehensive—as it were, the eye of the whole world, that in science, in which we are as yet, comparatively speaking, utter strangers, and in which our knowledge of facts is very limited, but not very clear, and to shape all the phenomena which present themselves to our observation according to such an imaginary view; and to see others in an unreal, distorting light, and thus tends to prevent him from pursuing his investigations beyond the generally narrow compass of his favourite hypotheses. Nature presents to our observation such an overwhelming number of facts, and on the very surface of our globe, facts, which in proportion as they are known to us, in varied modes of expression, the existence of many, seem only to open our eyes more and more to the existence of many more, previously unknown, agencies and forces—that it is an absolute waste of time and labour to indulge in speculations respecting the nature of the interior of our globe; and if such speculations are made at all, we must just as well adopt at once all the existing hypotheses, and thus be brought to the conclusion that the interior of our globe is in a state of antiquity—provided it be true that the ancient mythological traditions by the ideas of past and future meant to express the relations of cause and effect.

With respect to most of the sedimentary rocks, the doctrine of geology are more clearly defined, and its rules more reliable, because founded more on actual observation of facts. The organic remains in such strata present in their composition a condition more or less different from their original state, owing principally to the circumstance that those portions of the original organic substances which easily undergo decayed or being converted into gases were frequently more or less changed, and often altogether destroyed. By carefully examining all the prominent peculiarities of, and the influence exerted by the (mineral) substances which are in contact with such remains, and by trying to arrive thus at a clear knowledge of those agencies which may be still active at the present time, and by applying the general laws which are observed to control the fossilization and petrification of organic remains to any one of them in particular, we have every chance of arriving in the course of time at a satisfactory explanation of all the phenomena. For example, the occasional occurrence of subterranean coal in the coal measures, and of beds of anthracite in the so-called carboniferous rocks, would appear to indicate the presence in such localities of some agents, by which the process of the conversion of such vegetable remains into minerals has been greatly accelerated. By a moderate amount of attention paid to such facts, and by means of the practical knowledge thus acquired, to explain phenomena in a manner which is beyond the reach of doubt; but it is to be regretted that even here the igneous theory has intruded, under cover of the trap rocks, and, by propounding the doctrine that the anthracite character (or, in other words, the advanced state of fossilization) of coal in such situations is due to the direct agency of fire, and that it was not due to any of those agencies by which, as we may observe, a chemical conversion, by a kind of mineralization, of organic substances, is effected—sought to preclude the possibility of our obtaining a thorough and satisfactory clear knowledge of most of those grand forces of nature which are universally active on our globe, but whose expressions vary according to local circumstances, and with which a kind Creator has enabled us to become acquainted, if we only have the will.

The occurrence of the so-called trap rocks in almost all rock formations is certainly on grounds equally as good it might be assumed that our globe was originally a mass of molten metal, a metallic sea; and as geologists know that heat, even light, always accompany a rapid oxidation, the progress of oxidation of a metallic globe might be made to account for terrestrial heat!

a phenomenon worthy of the most careful attention of geologists; and the resemblance which almost all of them bear to one another, at least in their shape and mode of occurrence, would appear to point to the probability of some general force having controlled, and controlling, their formation; but then, again, the fact of those very rocks varying in the arrangement and nature of their components in a manner which would almost appear as corresponding to the respective varieties of the rock formations in which they occur, would appear to suggest to our mind that, although perhaps controlled in their formation by some general law, still their substance could not have been derived from one common source, and that, most probably, the rocks in which they occur were made to furnish a great portion of their components; and here the theory of an eminent geologist (Mr. Lyell), according to which, by some great terrestrial agency, sedimentary rocks are being gradually metamorphosed and assimilated in their nature to, perhaps, such rocks as originally have furnished the bulk of their mineral components, would probably be well applied. A higher degree of fossilization (mineralization) of the organic remains, and perhaps a traceable tendency towards a more crystalline arrangement of the components of sedimentary rocks in the vicinity of primary and trap rocks are, indeed, very questionable evidences of the igneous origin of the latter; and it would seem far more reasonable to look for a more satisfactory explanation of such a phenomena to those continually active terrestrial agencies to whose powerful influence we find that even rocks of an undoubtedly volcanic origin are compelled to yield as soon as they cease to be affected by the heat which accompanied the intense chemical action that produced them. If the intrusion of the igneous rocks into the coal strata, as in the case of the igneous rocks, were a mere circumstance, and perhaps, of an ocean above them—to volatile part of the components of the coal, and thus convert that coal into an anthracite, &c., then certainly that pressure could also not have been prevented; that the intense heat of such molten rocks would have changed water into steam, and that the intrusion of such rocks would have resulted in the production of considerable mechanical disturbances, of many characteristic and striking irregularities in the arrangement of those well-defined and regular strata, and not merely in a chemical change in some of their components; but the fact is, that we find near such rocks no signs suggestive of their having intruded in a state of igneous fusion; no trace of any, however limited, violent convulsion, such as would naturally take place where water comes in contact with intensely heated substances. We know several instances of coal seams being actually on fire, owing either to some accident or spontaneous ignition; and it is very probable that, when those seams become accessible, after the extinction of the fire, there will be found not only a kind of coke, but also many such substances, which, after having been volatilised, were subsequently deposited in spots that were less affected by the heat of the burning seams. In several localities, where coal seams are on fire, there happen also in the vicinity greenstone, and other such rocks (as, for example, on the estate of Plantin, in Saxony, where advantage has been taken of the circumstance to grow hot-house plants on the ground that is thus warmed by a gigantic subterranean oven); and supposing now that the fire in such coal seams, after having converted great part of them into a kind of coke, should have ceased burning—say, before men did exist in those localities, it is very probable that many would come to the conclusion that that coal had been converted into coke by the intrusion, in a state of igneous fusion, of that greenstone! Hence the utmost precaution is necessary in investigating such matters.

JULIUS.

AUSTRALIA—COLONY OF VICTORIA.

Sir,—Unlike other British settlements, the colony of Victoria, of this grand continental dependency, seems to stagnate whilst wealth increases, and even whilst the tide of emigration continues to pour a continuous torrent of settlers upon the coast of this temperate region.

Wool, the original staple, is produced in enlarged quantities by the pastoral proprietors, or squatters, throughout all the settled districts. Gold seeking employs one fourth part of the whole population in the arduous and uncertain toil of the diggings, and the immense numbers of immigrants, hundreds of thousands in quest of that which, whilst it enriches them, adds not one grain of corn to the common stock of nutriment.

Agricultural labourers, too, by thousands have flocked to this land of promise; but, attracted by the more certain returns of the golden ore, those pursuits for which they were better calculated, and to which by early experience had been addicted, were thrown aside, and they, too, have joined in the arduous pursuit of golden nuggets.

It is now five years since the first great discovery of such mineral wealth; and, notwithstanding the strong stimulus created by the high prices of agricultural produce, the increased breadth of agriculture is scarcely perceptible, and is most certainly wholly inadequate to the sustentation of the resident population.

This course of affairs is without a parallel in any other country of the earth. In California, a country little, if at all, inferior in auriferous wealth, whilst the mineral districts are wrought with equal avidity and industry, agriculture is also favoured and promoted; and in the Canadian the strongest inducements are held out to immigrant settlers, for not only are the lands open for purchase at extremely low averages, but grants are gratuitously made to agriculturists under certain conditions of tillage.

The very reverse of this is now publicly admitted as to this portion of the great Australian continent; there are recent conflicting letters in the press, the whole breadth of the land has been parcelled out in sheep runs for aboriginal squatters, and allotted in areas of many miles square, sometimes extending to a whole degree of latitude and longitude, as the feudal chase or grazing ground of a single proprietor; this, too, at first conceded as a transitory privilege, according with the primitive state of a newly-discovered country, is a complete stoppage of settlement or colonization.

The lands cannot be sold nor amortised amongst farmers, and yet the only inducement that could draw an agriculturist from his English home is the facility that may exist for the purchase of his land on credit; and he, too, is particularly if, at a great expense, he has taken his family to the antipodes in quest of freedom and independence.

We are told that the squattering landlords offer leases of seven years, at a nominal rent, as an inducement to farmers to rescue Nature's wilds in Victoria from sterility; but what British yeoman would risk the hazard of ejectment at the end of that term, or the confiscation of his improvements, the result of skill and labour, as soon as the location should become valuable? Having migrated so far, the settler would at least expect that the land he had purchased would be his own, and that he would be able to sell it at a profit. If the governing powers conferred upon the new Colonial Legislature are not addressed to the remedy of this anomalous and most unjustifiable usurpation, then there is an end to the colonization of this richest possession of the State.

Again, as to railroads; the governmental bodies, or Houses of Assembly, have been to this moment involved in conflict concerning them. As an imperative necessity to a swollen population, all acknowledge that commerce must stagnate without them, and yet but one line of any extent, from Melbourne to Geelong, has been finished! Even to that one line, which, if it were completed, has been opposed. And whilst the colonists admit that they must look to the London and four-fifths of the capital, they have already objected to sanction an enterprise originated in London, whereby one million was subscribed for a trunk line from Geelong to Ballarat, although they propose to raise four-fifths of the capital required for those enterprises here, and to manage the direction and outlay themselves there.

This selfishness is the cause of the delays which have obstructed the progress of railways, as the inordinate lust for territorial possessions; and of freebooting feudal power, has sealed up the wide domains of a great continent, precluding the adventurous settler from occupying and developing its boundless resources.

Neither the "postgradual" speechifying of successful returned speculators, nor the colour de rose dissertations of the Times, when treating of Australia, its elementary greatness, and its wondrous bound, per saltum, into very partial civilisation, can alter the fact which is too evident, that social progress, if not wholly stagnant, is woefully retarded by colonial ignorance and misdirection.

H. H.

ON THE TRIAL OF PATENT CAUSES.—No. XX.

Sir,—As I intend to make this the last of my present series of communications on the above important subject, it will be advisable just to advert to the main purport of my remarks, and then conclude. In the first eight letters I put forth a proposal that in all patent causes the question raised on the specifications should be referred to an officer or officers, who, with the authority of the Patent Commissioners, should issue a preliminary report involving a definite meaning of the specification. And this report should form the starting point in the determination of the respective rights of the parties in the cause.

I have not proposed to vary the existing mode of trial otherwise than this—to substitute the indefinite meaning of the specification ordinarily submitted to the court a definite meaning of that essential document. But small as this change appears when thus stated, all persons conversant with the subject will understand that it would make an essential difference in the duration of the legal proceedings in a strongly contested cause.

Now, my remarks in the first eight letters elicited a few suggested objections, to three of which I replied in substance:—1. That my proposal did not involve a second trial, with a double employment of eminent scientific witnesses, at a great cost, to the parties, and a consequent delay in the meaning of the specification, and confined that, instead of the indefinite, through an artificial mode of statement to the court, and mixed up with other questions in the cause. Besides, I combated the notion that it was necessary in all cases to employ eminent scientific witnesses capable of enlarging on the philosophy of the invention—the thing patented being a manufacture and not a philosophical fact.—2. That although it was undoubtedly essential to the success of the proposed plan that the scientific officer of the Patent Commissioners should be a capable man, and there might be some difficulty in finding such a man, yet this difficulty was by no means insurmountable. I think the world would be more inclined to accept of sufficient length probably to try the patience of your readers. Still there was much more that might have been said by way of bringing out some of the good points in the judicial handling of the case on the part of certain of the judges. I omitted points of this kind in order to avoid the appearance of prolixity, and because I thought the special application of the proposed plan to the case was a probable corrective of the defective points in the judgment, so far as they turned on the construction of the specification. It will be remembered that I traced the uncertainties (causing the prolongation of the proceedings) in the case to the want of a definite meaning being given to the specification, and having done this I merely pointed out the kind of report that might have fixed the meaning of the document. I did not pursue the question of trying patent causes any further, because it is not my intention at present to consider any points of detail, but to confine myself to the principle of a preliminary report by an officer of the Patent Commissioners, giving a definite meaning to the specification.

Least, however, it should be thought that Heath's case was unusually favourable

• Trap rocks in coal formations having often a bituminous nature, &c.

for consideration, I will just remark that as to the practical point to which the proposed plan applies perhaps more than any other—as accomplishing that which is now sought to be accomplished by the defendant's pleas and notices of objections, Heath's case presented no opportunity for any important remark. Fisher's, Hewick and others might have been chosen for this purpose. But I look Heath's case because it was likely to be familiar to many of your readers, and my aim was to show that in all cases, as the preliminary question in all cases must be—what claim is to be taken as expressed or fairly implied by the terms of the specification?—so there should be a preliminary report on this point. It is my firm conviction that much difficulty is often experienced by the court in determining what is really the point in dispute between the parties, there being so much exaggeration on both sides which the ordinary preliminary proceedings on delivery of pleas and notices of objections have but little effect in counteracting. In evidence of this I will just allude to a remark of Mr. Justice Creswell, in *Walton v. Balesmen*:—"I protest, looking as carefully as I can at these objections, I have had very great difficulty in knowing how the defendants meant to apply them, and I fear that in this case, as in others, objections so drawn, without any such specific statement as to the plea under which they are to be given in evidence, instead of serving to help us in the due administration of justice, may serve as traps and pitfalls for judges and juries to be caught in."

I think I have now laid enough before your readers to induce some of them who have a stake in patent property to examine whether my suggestions have any value in them or not, and I shall be glad to find that their merits are fairly and intelligently discussed by your readers, and wish no one to accept a single argument on the ground of personal authority.

With these remarks I beg for the present to leave the matter in the hands of your readers, merely reminding them that others besides myself are of opinion that there is great need for improvement in the Trial of Patent Causes. I will content myself with an extract from a leading article in the last number of *Newton's Journal of Arts and Sciences*:—"A new court for the trial of patent cases is absolutely indispensable."—*Office for Patents, Chancery-lane, W.C.*

WILLIAM SPENCE.

MARKHAM'S "SHAREHOLDERS' LEGAL GUIDE."

Sir,—As you were good enough to think my work, "The Shareholders' Legal Guide" worthy of favourable notice in your impression of last week, it would seem unseemly of me to enter into a literary Coliseum, for the purpose of wrestling with your reviewer, whose disposition towards me appears to be that of a friend, and not that of a foe. I could, however, have wished that this gentleman, when breaking a small lance with me about my statements as to limited liability in mines situated in Devon and Cornwall, would have quoted one remark of mine, from p. 157, to the following effect:—"With regard to the liability of shareholders situated in the counties of Devon and Cornwall, they are governed by ancient custom, and shareholders in such companies may consider themselves tolerably safe. Certainly, they might make themselves liable if they distinctly gave their manager or purser leave to pledge their credit, but not otherwise."

Mining associations in Devon and Cornwall, subject to the laws of the Stannaries, and working strictly on the Cost-book Principle, have always been a distinct genus from mining associations working out of the Stannaries, and calling themselves cost-book mines. As a proof of this, I may observe that the new Joint-stock Acts, in express terms, exclude from their operation all persons who are engaged in working mines, and subject to the jurisdiction of the Stannaries. But they do not exclude from their operation those persons who are engaged in working mines out of the counties of Devon and Cornwall. These associations, therefore, if numbering more than 20, must register themselves as a limited company under the new Act, if they wish to avoid unlimited liability. Now, why did not the Legislature interfere with mines situated in Devon and Cornwall? Doubtless, because as such associations are the growth of custom, and as they are regulated by vice-Chancellor Kindersley with their ancient privileges. They were defined by Vice-Chancellor Kindersley to be "monster parties," and certainly are not likely in any way to injure Mr. Ennor, of whom personally I know little, but as a matter of common justice, I think public attention ought to be directed to this really energetic and practical attempt to combat the admitted evils of mine jobbing. As the Vicar of Wakefield was of opinion that the man who brought up a family did more service than he who only "talked of population," so it seems to me that a man who takes *bona fide* the real practical step of bringing out and working a mine on honest principles is more useful than a hundred who merely confine themselves to wordy declamation. That Mr. Ennor is doing this will, I think, be evident from the following facts:

As to the Mine.—The Owilcombe Mine is one of the oldest in Devon, having been worked from the earliest times. It is impossible to estimate the quantity of tin produced in these early workings, but it must have been very great, for the open works on the backs of the lodes are the largest I have ever seen; one now would easily be mistaken for a natural ravine. Twenty-five years ago the mines were re-worked by a Manchester party, and their operations, continued for several years, resulted in raising 80,000 worth of tin, to some profit, after spending 15,000. In law, thus setting the example now being followed by the neighbouring Arundel. During many years 15 tons of black tin were regularly sent to the smelting-house monthly; but the mines were never half wrought by this company, for they had not sufficient power for drainage. The water was continually in the mine, except two or three months in the wettest part of the year. It was in attempting to remedy this, by bringing water from the moor, that they were led into their disastrous lawsuit with Mr. Bastard, of Buckland. A London party next attempted this mine, but did no good, in consequence of attempting an impossibility—that is, to work it by water-power; yet they raised 20,000 worth of ore, and about paid cost. It must also be remembered that tin, now worth 70s. per ton, sold in the first working as low as 36s., and in the second as low as 42s. per ton. The mine is still comparatively shallow, with half a dozen untouched parallel lodes, which can be proved by trifling cross-outs. As to the backs of these lodes and the strata, I have seen nothing to equal them out of Cornwall.

2. As to the Leases.—That a mine of this kind should have remained so long idle may be a matter of surprise; but it is easily accounted for—the sett is complicated. Part of it is "bounded," and the tin belongs to Lord Mount-Edgcumbe, while the copper belongs to two other proprietors. These leases have been held by different parties, each standing out for his own share, and thus the whole was rendered useless. Even since the leases have all fallen in there has been difficulty in dealing satisfactorily with so many contending interests; so that every one has failed, though many tried, in getting reasonable terms. While the tin belonged to Lord Mount-Edgcumbe, the lords of the soil insisted on having dues for it as well as for the copper, besides stipulating for a considerable fixed rent, for which they had the pernicious precedents of the old leases. All this I know personally, for on two occasions I was connected with parties who were ready to give most liberal terms, but who failed on both occasions. The terms upon which Mr. Ennor has obtained the sets really astonish me. Not only so, but the parties I was connected with inquired of him, bringing only 10,000l. premium, which was not considered an unreasonable price as things go, considering the sets, Mr. Ennor gives free to the shareholders. Besides this, Mr. Ennor professes (and I see no reason to doubt his profession) that there is to be no jobbing in the supply of machinery or materials—that all are to be had by public tender at the cheapest market.

Now, I think there can be no doubt that such a mine as this, brought out in such a manner, is a real desideratum in mining, and that in carrying it to a successful issue Mr. Ennor has earned the gratitude of every one who desires and believes in the possibility of carrying on mining without its present gross appearance of jobbing, to use the mildest expression. There are probably many such sets as Owilcombe; now unworked in the West. If really honest mining agents, of which there are many, would take them up, and bring them out on such principles as Mr. Ennor has brought out the Ashburton United, I am satisfied they would ultimately reap a more ample reward than those who follow the present reckless and ruinous courses—ruinous certainly to the shareholders, or, in nine cases out of ten, equally so to themselves.

Times, Feb. 10.

H. B.

LEGITIMATE MINING.

Sir,—The remarks of your correspondent, "Germoe," on this important subject, are encouraging, for it is certainly time for some one to come to the aid of the poor despised mine captain, who has not only been left in the background, but made the scapegoat of a host of unprincipled schemers and bal sellers. It has been said that we should come forward and vindicate our own cause, but we have seen the utter uselessness of the attempt to do so. The capitalist has suffered enormously; and I may predict that, unless they be more circumspect than usual, they will have plenty of complaints to make before the year closes; for there are many cases where the public which the public which a practice mine agent would be ashamed of. Mr. Ennor, in allusion to this subject, says that many a mine has been abandoned before an attempt has been made to explore the lodes, and this assertion I can fully corroborate from my own experience. Perhaps the agent has said that something good might be expected at a 20 or 30 ft. level, but finds but a slight improvement, and the indications still good, so that it is necessary to go deeper for the mineral; but the shareholders have been already relieved of their cash to fill the sellers' pockets, therefore the mine is abandoned. It too frequently happens, that if a miner discovers a lode worthy of a trial, or even a paying lode, in right, he cannot induce a person to buy it for 1000l., although if the same piece of ground is offered through a flourishing prospectus 10,000l. are readily subscribed.—This I also know from experience. I, therefore, consider that if a person intends to speculate in mining he should visit Devon and Cornwall, and obtain information, for thereby he would avoid the loss of much of his cash.—*Lostwithiel, Feb. 9.*

JOHN SKYMOOR.

LEGITIMATE MINING—THE CHANCELLORSVILLE COMPANY.

Sir,—Though at present residing on the Continent, I continue to be, as I have long been, a constant subscriber to your Journal. Knowing that you are ever ready to attend to the requests of subscribers residing in England, I feel convinced that you will be equally indulgent to the absent.

Permit me, Sir, to ask what is meant by the hackneyed phrase, "legitimate mining," of which we read so much, and which is so often asserted to be far superior to any other speculation. When in London, in June last, I read the account published in the *Mining Journal*, the *Times*, and other papers, of the trial made at Lostwithiel on the ore sent from the mines, or rather the estate, of the Chancellorsville Gold Mining Company, in Virginia. The names of the scientific gentlemen present who conducted the experiment are above suspicion, the ore operated upon had been "shovelled up haphazard from a mass upon the premises," the result was in accordance with the statement previously put forth by the directors; the supply of ore was stated by them to be inexhaustible, the machinery was found well adapted to the work, &c. Above all, it was stated that 30 tons of ore had been crushed daily for some time, and that the machinery, on which 6000l. had been expended (query, thrown away), was capable of reducing 50 tons daily. Moreover, that but little expense would be incurred in the procuring of the ore, as it could be sent to England as ballast.

Thinking, in my ignorance, that this might possibly rank as a "legitimate speculation," I allowed myself to be persuaded to invest a large sum in shares, by friends who entertained no doubt of the probity of the directors, or of the integrity and skill of Mr. Harris, the manager. I need not trouble you, Sir, with an account of what has passed since June, of the falsehoods put forth from time to time by the directors or the manager, and the gross deception practised on the shareholders. The shares

Capt. GOLDSWORTHY replied about two months would take it down 5 fms., which would prove the ground. It was in the hands of the shareholders, but he should like to see it done, as it would prove much earlier whether the ore was good down in the 66 fm. level.

[illegible]

BRITISH MINES.

CAMBORNE CONSOLS.—W. Roberts, Feb. 9: The following bargains were set on Friday last:—The 50 fm. level to drive east of Wheal Gons cross-course by six men, at 15s. 6d. for the first 100 ft., producing stones of lend ore. The 20, west of Finsdale's shaft, by four men, at 10s. 6d. for the first 100 ft., with mangle and stones of ore occasionally. The 10 west by four men, at 3s. 6d. for the first 100 ft., the lode is 1½ ft. wide, with stones of good yellow ore. A rise in the back of the 10 fm. level by four men, at 4s. per fathom; the lode is small. The tribute pitches are looking tolerably well.

GREAT WHEEL BADDERN.—J. Jenkin, Feb. 8: Since last meeting, on Dec. 8th last, we have driven the 61 and east about 4 fms., 2 fms. of which is in the elvan but very hard for driving; the end is now 169 fms. from the eastern engine-shaft, the lode is 1 ft. wide, producing about 18 ows. of lead ore per fm.; within the last two days the elvan appears more congenial, and lode improving. We have communicated No. 5 mine to the 61 about 107 fms. from eastern engine-shaft; in the slopes east and west of the said mine the lode is 18 in. wide, producing from 1 to 1½ ton of lead ore per fm.

NORTH TAVY.—R. Williams, Feb. 11: The prospects of this mine still continue good, and in the western stop in the back of the 20 the lode has considerably

ore, a very kindly-looking lode. The Gieba adit is progressing satisfactorily; we have driven upwards of 10 fms. in the past month.

WHITFORD.—John Trevelyan, Feb. 11: We have commenced the new shaft from surface, to be carried 7 ft. 6 in. by 4 ft. 6 in. within the timber, which will be sufficient size for drawing and footway, and an engine-shaft if required; but having no adit level down to the 40 we are satisfied that an engine will not be necessary until we go under that level, and there is a very great doubt, from present appearances in the adjoining sets, if it will be required at a greater depth. We calculate on having about 15 fms. of shaft to sink through before meeting with the lode, when in all probability we shall have a profitable one to sink on, so many hundreds of tons having been raised on the east and west lode, in the other set, about 20 fms. from our shaft; and on the north and south lode, near the junction of the two lodes, we have our shaft. This lode in the 60 presents a most favourable character, composed of limestone, carbonate of lime, blende, and lead ore, producing of the latter $\frac{1}{2}$ ton per fm.

* * With this week's Journal we give a SUPPLEMENTAL SHEET, which contains:—The Southern Gold Fields of New South Wales; Photographs from Manufacturing Districts; Great Wheel Vor United Mines; Midland and Eastern Counties Railway Company; Rosedale Abbey Ironstone; Memo. of Mines and Miners; English Coal, and Human Power; White Brass; Alloy for Medals; Iron Metallurgy; Popular Geology; Manchester Geological Society; Derbyshire Coal-fields; Vulcanising India-Rubber, &c.

The Mining Market; Prices of Metals, Ores, &c.

METAL MARKET, London, February 12, 1858.

COPPER.	£. s. d.	BRASS.	Per lb.
Copper wire.....p. lb.	0 1 4 1/2	Sheets.....	13d.-13 1/2d.
ditto tubes.....	0 1 3 - 14	Wire.....	12 1/2d.-13 1/2d.
Sheeting and bolts.....	0 1 2 - 13	Tubes.....	14 1/2d.-
Bottoms.....	0 1 0 - 13		
Old (Exchange).....	0 1 0 - 13		
Best selected.....	128 0 - 0		
Tough oak.....	128 0 - 0		
Tie.....	128 0 - 0		
South American.....	118 0 0-120 0 0		
IRON.			
Bars, Welsh, in London.....	7 10 0-8 0 0		
ditto, to arrive.....	7 5 0 -		
Nail rods.....	8 0 0 -		
Starford, in London.....	8 10 0-9 0 0		
Bars.....	8 10 0-9 0 0		
Hoops.....	9 10 0-10 0 0		
Sheet, single.....	10 0 0-10 10 0		
Pig, No. 1, in Wales.....	3 15 0-4 15 0		
Refined metal, ditto.....	4 10 0-5 0 0		
Bars, common, ditto.....	6 10 0-7 0 0		
ditto, railway, ditto.....	6 10 0-6 15 0		
ditto, Swed., in London.....	14 0 0-14 10 0		
in stock to arrive.....	2 17 0-2 19 0		
Pig, No. 1, in Clyd.....	2 15 0-3 0 0		
ditto, in Fyne and Tees.....	2 15 0 -		
ditto, forge.....	2 15 0 -		
Staffordshire Forge Pig.....	4 10 0-5 0 0		
Welsh Forge Pig.....	3 0 0-4 0 0		
LEAD.			
English Pig.....	23 0 0-23 10 0		
ditto sheet.....	23 10 0-23 15 0		
ditto lead.....	24 10 0-25 0 0		
ditto white.....	27 0 0-30 0 0		
ditto patent shot.....	26 10 0-27 0 0		
Spanish, in bond.....	23 0 0 -		
American.....	none.		

* At the works, la. to la. 6d. per box less.

REMARKS.—The rapidity with which our market has recovered from its depressed state is really surprising, and although the advance in prices generally has been very considerable, there is still a tendency to further improvement, assisted materially by a speculative feeling, as well as by an evident manifestation of renewed prosperity in ordinary channels. It is exceedingly gratifying that business should have taken such a favourable turn so suddenly, especially when it partakes of that character which is likely to prove conducive to remunerative prices, and the currency of our market sufficiently moderated to prevent any counteracting influence in the demand. The cheapness of money is a matter of the highest importance to the whole trading community, and invariably constitutes the chief support to the continuance of enhanced prices. Another reduction of $\frac{1}{2}$ per cent. was announced yesterday after the Bank meeting, reducing the current rate of discount to 3 per cent.; it is, therefore, not improbable that at the very cheap rate at which money can be obtained, merchants will be induced to enter into extensive transactions; at the same time, necessary caution is most essential to prevent losses and to secure profits. The slightest retrograde movement just now would be very unwelcome.

COPPER.—We have to report a further increase in prices, as will be observed by the annexed list. The smelters, on Monday, held a special meeting, and duly announced the alteration in course of the day. The rise was anticipated, and therefore created little or no surprise—in fact, it is questionable now whether the market remains for any length of time at present quotations; the metal is becoming scarce, and the requirements for France are large. Besides increased enquiries from other quarters, there is still a good opinion entertained of the market, and buyers, we think, cannot hurt in effecting purchases. There is frequently second-hand parcels pressing on the market immediately after an advance, but such is not the case now; or if there are holders, apparently they are not disposed to sell at any concession; probably better prices may be looked for. The market closes with much firmness: 126s. per ton is reported to have been paid for Lake Superior. At Swansea, on the 9th inst., 965 tons of ore were sold, and 1389 tons are advertised for sale on March 2. The standard has improved since the alteration in fixed rates.

IRON.—There is a steady demand for rails, and prices are unaltered. In merchant bars the enquiries have very much fallen off for several weeks past; nevertheless, ironmasters have not made the least concession: on the contrary, some of the makers of first-class brands have raised prices 5s. to 10s. per ton. Staffordshire qualities are dull, and nail rods and hoops have been brought under last week's quotation, contracts having been passed at 8s. 10s. for the former, and 9s. 10s. for the latter, of good qualities. Scotch pigs have slightly fluctuated in price, mixed numbers having been quoted as high as 56s. 6d. to 57s., but have again dropped to 56s., sellers. The shipments coastwise have been excessive but for abroad they are small.

LEAD.—For English higher prices are asked, and 23s. per ton has been paid for good soft pigs; best brands, 23s. 10s.

SPELTER.—About 15s. per ton extra has been realised for this metal; business having transpired at 28s.; the market closes firm, and prices may further advance.

TIN.—On the 8th inst. the smelters raised the price of English descriptions 5s. per ton, at which prices they are even now indisposed to sell, preferring, as they state, to deliver that already under contract. In foreign there is but slight alteration. Banca, 127s. to 128s.; Straits, 125s. to 126s. The market is steady, but for the moment quiet.

TIN-PLATES are held firmly at previous rates.

LIVERPOOL, FEB. 11.—During the past week the business transacted in manufactured iron has been limited, but no giving way in prices is observable, which testifies to the healthy condition of the trade. The accounts from the United States, received by the America, are somewhat more encouraging, and orders are beginning to be more regular. The home demand is steady, and dealers are fairly supplied with orders. The market for Scotch Pig iron has shown increased animation, a fair business having been done on open time, resulting in an advance of 2s. to 2s. 6d. per ton on the prices of this day week? the cheapness of money, and the comparatively low prices, together with the prospect of an average demand from abroad, has induced a feeling of confidence in the stability of the article, and hence operations have been more for forward delivery than for prompt settlement. The shipments are again large, being 8689 tons, against 5411 tons for the corresponding week of last year. The present week has witnessed a further rise in the prices of both Tin and Copper, in the former to the extent of 5s. per ton, and in the latter of 1d. per lb. on manufactured, and 9s. per ton on unmanufactured. The rapid advances in the price of Tin have tended materially to stop orders, and the demand may be said to have almost ceased, for there is but little confidence in present rates being long maintained; already foreign Tin is offered at a reduction, and sellers are more plentiful than buyers. With respect to Copper there is more uncertainty, but still holders avail themselves of clearing out at even something under current quotations. Tin-plates maintain their advanced rates; makers are sufficiently full of orders to warrant them in refusing contracts for forward delivery, and the demand for present shipment is satisfactory. Lead shows but little alteration; prices are well supported. The following are the quotations:—Iron: Merchant bar, 7s. to 7s. 10s. per ton.—Tin: Common block, 128s. per ton;

common bar, 129s.; refined block, 131s.—Tin-plates: Charcoal, 10s. 3s. 6d. to 3s. 8d. per box; coke, 10s. 2s. 6d. to 2s. 9s.—Lead: English sheet, 24s. per ton; English pig, 23s.—Copper: Cake and tile, 126s. per ton; best selected, 129s. per ton; sheeting and bolt, 1s. 2d. per lb.—Yellow metal sheeting, 1s. per lb.—Steel: Blistered, 30s. to 40s. per ton; spring, 18s. to 24s.; cast and shear, 50s. to 60s. per ton.

NEW YORK, JAN. 30.—The demand for all kinds of iron continues limited, and prices for most descriptions are mostly nominal; small sales of Scotch Pig at \$23 50c. to \$24, cash, and \$25 to \$26 per ton, six months.

The most prominent feature in our remarks of late has been the marked and rapid rise in the value of mining securities, caused by circumstances which from time to time we have endeavoured to point out. This week the SHARE MARKET, in addition to a still increasing demand on the part of the public for stock (and it is pleasing to know that the rise is not caused by mere speculation, but by bona fide purchases for investment), has been acted upon by a further rise of 5s. per ton on tin, and 1d. per lb. on copper, with increased rates for lead. The smelters, we are told, are short of stock, and it is probable we may see a still further rise in metals shortly, which will bring many progressive mines into the Dividend List, and greatly add to the profits of existing paying concerns. It is gratifying to us, and must be so to all supporters of legitimate mining, to see the position it is now assuming—a position we have long claimed for it, and one for which the Mining Journal has stood almost alone in advocating. Foreign mines have ever met with the support of the daily press and of the Stock Exchange. English mines, until lately, were scarcely recognised by the latter, and by the former are scarcely noticed even now. The public, nevertheless, are becoming alive to them, as daily evidenced by their eagerness to obtain information, and by the addition to the Share Lists of the principal mines of the names of large capitalists, hitherto strangers to English mining investments; and this increase of attention to mining pursuits brings increase of anxiety, for spurious mining is made attractive and fascinating, and those who are deceived by it too frequently, in consequence, judge and condemn legitimate undertakings. If we turn to the "Memoirs of the Geological Survey," we shall find the value of the mineral products of the United Kingdom for one year to be 37,753,021l. Let us just conceive, then, the enormous amount of capital employed in raising and making them marketable, the hundreds of thousands of persons employed and supported by mining operations, and look how, in its numerous ramifications, it increases various trades and occupations, to an extent that would scarcely be credited if given in detail. Whole forests of Norway timber and tons of gunpowder are consumed in Cornwall alone; and we should be glad if some correspondent would enter into detailed statements of the different articles used at one extensive mine, so that the commercial importance of mining in regard to them might be more clearly understood by the general public. Of the minerals valued in the survey we have quoted, the Cornwall and Devon Mines yielded copper, 2,341,960s.; lead, 1,431,509s.; tin, 663,850s. In 1857, 60 of these mines paid dividends from profits amounting to 385,043s. 10s., most of them paying 15 to 20 per cent. upon the market value, and many of them hundreds per cent. upon paid-up capital. In 1845 there were only 18 dividend mines; in 1848, 22, so that they have gone on increasing, and will do so far more rapidly as capital is brought in to develop them, and English mining becomes more extended and supported, as it deserves to be. Dividend mines have been most dealt in during the week, though progressive and sound speculative mines are becoming in great request, and will become more so when the rise in high-priced shares shall bring in sellers, with a view to profits and re-investments. Bassets have further advanced to 230, 240; in the 45 east, being the most eastern part of the mine, the lode is worth 4 tons, or 90s. per fm.; none of the deeper levels are up to this point, which is a most important one. South Frances, 250 to 260, but no material alteration in the mine; Devon Consols, 460 to 470; Mary Ann, 46 to 47; Trelawny, 23 to 24. Rosewarne, 27s. to 30s.; at the meeting the accounts showed a loss on the two months' working of 100l., and a balance in hand of 487l.; the December sale of ore credited was 496l. 1s. 3d., whilst the next will realise 700l.; the 70 fm. level is looking well, with good stones of ore, although eastward there are 40 fms. to drive to get under the rich bunch of ore in the 58; the 70 west, also a good lode, has 10 fms. to drive to get under the ore ground. Grambler and St. Aubyn have been in great request at 110 to 120, with difficulty in finding shares. Great Alfred shares have advanced to 5s. 6d.; there is a stream of hot water issuing from the bottom of Copper-house shaft, leading to the supposition that something good is not far distant. Alfred Consols have been very flat; sellers at 10s. to 11s. North Robert, 3 to 3s. at the meeting the accounts showed a profit of 320l. in the past quarter, notwithstanding two-thirds of the ores were sold when the standard was at the lowest; the 230 tons for sale this month are expected to fetch about 1950s., and give a good profit; the reserves are estimated at 350 tons of ore. St. Day United, 1s. to 1s. 1d. and a fair business doing; at the meeting, on the 22d inst., a dividend of 1s. per share is expected; the lode in the 124 is worth 30s. per fathom. West Damsel, 120. Tincroft, 4s. to 4s. 6d.; the bottom levels look well, worth 30s. per fm. each. In East Russell a large business has been transacted, and prices advanced to 4s. 4s.; in the 66 fm. level we understand a good course of ore has been gone over, worth 2s. 6d. tons of ore per fm. for 40 fms. long, and in four months the 85 fm. level will be under where, in one place in the 66, the lode is worth 100s. per fm.; this is a very important point to look at, and there is the chance of a great rise in that time. Redmoor shares are also becoming largely enquired for in the market at 3s. to 3s. 6d.; the mine has already sampled 15 tons of rich silver-lead ore, and the discoveries on the copper lodes in Kelly Bray running towards it. Hingston Down have been in request, and advanced to 5s. 6d.; Margaret, 66 to 68; Providence Mines, 78 to 80. Wheel Margery shares have been more freely offered at 8s. to 8s. 4d.; Craddock Moor is in request at 40 to 41; South Basset, 8s. to 8s. 4d.; North Frances, 10s. In Vale of Towy large transactions, at 1s. to 1s. 1d.; a great improvement has taken place, and the eastern lode, at Bonville's shaft, valued at 3 tons per fm. Lady Bertha, 1s. to 1s. 1d.; Wheel Zion, 2s. to 2s. 6d.; West Grenville, 4 to 5; West Frances, 21 to 22; East Rosewarne, 2s. to 2s. 6d.; Wheel Kitty (St. Agnes), 3s. to 3s. 4d.; North Levant, 3 to 3s. Kitty (Lelant) have been dealt in at 13s. to 13s. 14s.; we stated last week that we had understood there were hopes of an amicable settlement of the boundary dispute with Wheel Mary, and the shareholders should take the matter up more spiritedly, and enquire into the management generally, to remove the present incubus upon the concern, whilst tin is going up so rapidly. Bell and Lanarth, 4 to 4s.; Carn Brea, 5s.; South Tolgus, 150 to 160; Pendean Consols, 4 to 4s.; and in demand; East Tolgus, 60 to 70; South Caradon advanced 300 to 400; Botallack, 200 to 205; Ding Dong, 17s. to 18s.; Wheel Edward, 7s. to 8s.; Par Consols, 21s. to 22s.; Great Hewas, 20 to 21; Deval Buller, 2s. to 2s. 6d.; Hender, 2s. to 3s. and in request; Virtuous Lady and Bedford, 2s. to 2s. 6d.; West Par, 15s., and enquired for. Garreg, 4s. to 4s. 6d. and mine improving; Venton, 1s. to 1s. 6d.; Trevelyan have advanced from 17s. 6d. to 27s. 6d.; East Carn Brea, owing to an improvement, have advanced to 4, 5; Wheel Harriet, 14 to 16; Wheel Union, 5 to 6; South Carn Brea, 4s. to 5s.; East Basset, 100 to 105; the mine goes on steadily improving, and a good demand springing up for shares. Kelly Bray, 2s. to 2s. 6d.; the mine has improved; in the 45 west the lode is worth from 20s. to 25s. per fm.; the winze sunk from the 35 to the 45, now communicated, is worth 20s. per fm.; no call was made at the meeting; balance in hand, 100s. Wheel Emma Extension, 2s.; mine improved in the bottom of the level. North Basset have been in request at 16s. to 17s.; West Basset, 24 to 25; West Caradon, 110 to 120.

MINING EXCHANGE OFFICIAL LIST OF TRANSACTIONS DURING THE WEEK:—
SATURDAY, FEB. 6.—Ding Dong, 17s.; East Basset, 100; East Russell, 3s. to 3s. 6d.; Great Hewas, 20s. 9d. to 21s.; Lady Bertha, 21s. 6d.; Margery, 8s. to 8s. 4d.; North Frances, 10s. to 10s. 4d.; North Rosewarne, 25s.; Pendean, 4s. to 4s. 4d.; Providence Mines, 78; Redmoor, 6s. 9d. to 7s. 9d.; South Caradon, 375 to 385; South Frances, 240 to 250; South Basset, 8s. 8d. to 8s. 11s. 3d.; South Tolgus, 152s. to 157s.; St. Day United, 21s. 3d. to 22s. 3d.; Tincroft, 4s. to 4s. 6d.; Tolgus, 6s. to 6s. 6d.; Vale of Towy, 25s. 2s. 6d. to 26s. 3d.; Wheel Kitty (Lelant), 13s. 12s. 13s. 14s. 15s. 16s. 17s. 18s. 19s. 20s. 21s. 22s. 23s. 24s. 25s. 26s. 27s. 28s. 29s. 30s. 31s. 32s. 33s. 34s. 35s. 36s. 37s. 38s. 39s. 40s. 41s. 42s. 43s. 44s. 45s. 46s. 47s. 48s. 49s. 50s. 51s. 52s. 53s. 54s. 55s. 56s. 57s. 58s. 59s. 60s. 61s. 62s. 63s. 64s. 65s. 66s. 67s. 68s. 69s. 70s. 71s. 72s. 73s. 74s. 75s. 76s. 77s. 78s. 79s. 80s. 81s. 82s. 83s. 84s. 85s. 86s. 87s. 88s. 89s. 90s. 91s. 92s. 93s. 94s. 95s. 96s. 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1857 493 ... 6% ... 36,172 15 6 ... 154 10 0 ... 112 18 0 ... 135 0

The copper in the ore expresses the nett price per ton of copper paid to the miner.

In another column we publish *in extenso* the important judgment delivered by his Honour the Master of the Rolls, in the case of *WILLIAMS v. PAGE*, which was a bill filed against the managing directors of the projected MIDLAND AND EASTERN COUNTIES RAILWAY, praying for an account of the receipts and disbursements by them. The defendants, of the greater part of them, had the management of its affairs, and the control of its funds, and some executed the subscribers' agreement and parliamentary contract for 300 shares each, though they did not, as was in evidence, and, indeed, by them admitted, pay any sum whatever in respect of such shares; but who borrowed from Messrs. GLYNN & Co. a sum of £100,000 and upwards, to be enabled to make the required deposit to comply with the standing orders of the House of Lords. The amount so borrowed was paid back to Messrs. GLYNN & Co. out of the assets of the company; on the part of the plaintiffs it was contended (and in this view his Honour concurred) the directors ought to bring into account the amount of additional shares they subscribed for, to be distributed *pro rata* among the outstanding shareholders. The decree intimated to be given by his Honour when the other parties referred to in the judgment are brought before the Court, on amendment, is that which is prayed for in the bill—viz., an account of all the receipts, and all disbursements, properly made, and

OLD TREBURGET.—Notified in your valuable Journal of Jan. 23 some questions respecting Old Trebraget, and as no one has replied to them I beg to give your correspondent all the information I can, and am only glad to find that there is some person beside myself that feels interested in this most valuable mining property. The first outlay (before the mine became a dividend one) was very small, as there were rich discoveries made very near the surface. It was worked under the superintendence of Capt. Ennor for 14 years, during which time the proprietor of the land received upwards of 15,000*l.* in dues, and, using Capt. Ennor's own words, as in your Journal not long since, "returned tens of thousands of pounds to the adventurers in dividends. There are two men now working on the mine, above the 15*ft.* level, and paying well. They sampled about 15 tons of gossan above a month ago, and obtained 10% pure gold, and about 5 tons of rich lead. And there are hundreds of fathoms in this lode yet unexplored. I do not hesitate in saying, as I have heard many first-rate miners say, that I believe Old Trebraget to be one of the best speculations in the country. There is an engine-shaft, which has been very recently well timbered, and I hope ere long I shall see a steam-engine again on the mine.—MINE AGENT.

SUBSCRIBERS IN AMERICA.—Our friends in America are informed that they can obtain the *Mining Journal* by ordering it from a bookseller in any of the principal towns in the United States. Mr. Trübner, of Paternoster-row, is the London agent, and sends parcels by every mail to the principal booksellers and news agents there.

balance there may be to distribute *pro rata*; and thus the managing directors be made to contribute to all expenses incurred by the failure of the project in every respect with all the ordinary shareholders, and that there be no preference or partiality.

COLLIERY ACCIDENTS—PRACTICAL SUGGESTIONS.

TO THE EDITOR OF THE MINING JOURNAL.

Much attention has been drawn of late to various means which have been proposed for preventing accidents from "overwinding," or "pulleying." It may tend to the more general adoption of a simple and inexpensive arrangement for this purpose if you will be good enough to give it publicity in your Journal, that all apparatus which is complicated, or has to be frequently attended to, should be avoided. The mode I have proposed, is to bolt two strong pieces of timber across the pit frame, below the pulley or sheave, for the ascending cage to strike square against, instead of running against the pulley, and throwing the men out, as is generally the case. The rope either breaks or the engine is brought to a stand. To ease the shock the guides are brought rather closer together at the top, and strengthened by transverse timbers, which bend slightly as the cage enters the contracted part, as into a break. The cage would probably be sustained after the breaking of the rope by the pressure of the guides alone; but to prevent any possibility of the cage falling back into the pit, two pieces of wood should work on pins passing through the guides, in the same manner as ordinary fans for receiving the cage at the top of the pit, but with this difference—that they would be self-acting. They should be placed above the point to which the cage ascends in ordinary work. The cage would have to be released from its position by unscrewing one of the transverse bearers of the guides, and the engine-man would be effectually detected. The colliers should be cautioned never to jump out of the cage, as in attempting to save themselves they sometimes fall down the shaft. Half a dozen pieces of timber and a score of common bolts are all the materials required for this apparatus.

I am tempted also to describe to you a simple kind of Subterranean Barometer for fire-damp mines, which will indicate with much greater delicacy than an ordinary barometer the expansion or contraction of the fire-damp in the goafs, or old workings. It can be made by a tinman with a piece of brass tube, 6 in. long, and 1 in. internal diameter, closed at each end; a fine copper tube, 12 feet long, and $\frac{1}{4}$ in. or less in internal diameter, and a glass tube 4 feet long and $\frac{1}{2}$ in. bore. A hole must be bored in the solid coal of $1\frac{1}{2}$ in. diameter and 4 yards deep. One end of the copper tube having been soldered into the brass vessel, the latter is pushed down to the end of the hole previously bored, and the vacant space filled up with clean coal. The air vessel is, in fact, a small model of a goaf, and the temperature of the coal, and consequently the air in it, being constant, or nearly so, throughout the year, the expansion or contraction of the air in the brass vessel and copper tube is due only to the alterations of the external atmospheric pressure. By attaching a glass tube, with water or oil in it, to the outside end of the copper tube this expansion or contraction can be measured by the rise and fall of the top of the column of oil or water in the tube. The glass tube should be inclined at an angle of 20° to the horizon, and fixed to a white board, which should be graduated by comparison with an ordinary barometer. The scale on the board will be at least twelve times as open as the scale of the barometer, and by having a larger air vessel, or a smaller and longer glass tube, it can be increased in delicacy to any extent desired. The air vessel may be filled with fire-damp if desired. The means will readily suggest themselves of making such a barometer self-registering, or to indicate only the maxima and minima. I trust that these suggestions may prove useful.—Clifton, Feb. 10.

HERBERT MACKWORTH.

COALS AND STEAM.

Whatever objections may be urged against the course adopted by the gentlemen to whom the award of the Steam Collieries Association prize was entrusted, as regards the plans that were rejected without trial, there can be no doubt that their experiments were carried out in a thoroughly practical manner, and that the results, so far as they go, are highly important. This is, perhaps, especially the case with regard to those experiments undertaken for the purpose of obtaining a standard with which to compare the results given in trying the several plans selected from among those sent in for competition. In the first place, the boiler used was an ordinary multitubular marine boiler, so that there can be but little question as to the applicability of the results, regarded as maximum results, and of the methods by which they were obtained, to ordinary practice. In obtaining these standards a series of experiments were made, in which the stoking was conducted according to the ordinary system, every care being taken to get the maximum amount of work out of the boiler by keeping the fire-grates clean, and by frequent stoking. Moreover, since the economic effect of fuel is increased when the ratio of fire-grate area to the heat-absorbing surface is diminished, two series of experiments were made with fire-grates of different area (28½ and 19½ square feet respectively); in both cases the average results were adopted. The difference between the results thus obtained when, in the one case, air was admitted only through the fire-grates, and when, on the contrary, air was also admitted through apertures in the fire-door, so as to effect the combustion of the coal gases, and thereby prevent smoke, is shown by the following table:—

	Fire-grate area 28½ square feet.		Fire-grate area 19½ square feet.	
	A.	B.	A.	B.
Economic value of fuel expressed in pounds of water evaporated from 212° F.	9.41	11.15	10.06	12.38
Rate of combustion per square foot of fire-grate expressed in pounds of coal per hour	21.15	19.00	21.00	17.25
Rate of evaporation per square foot of fire-grate expressed in cubic feet of water from 60° F. per hour	2.62	2.93	2.909	2.995
Total evaporation per hour expressed in cubic feet of water from 60° F.	74.80	79.12	56.01	57.78

The results given under the column A were obtained when dense smoke was evolved, while those given under the columns B were obtained when air was admitted through the fire-doors as well as through the fire-grate, and in consequence of which the combustion of the coal was perfect, no smoke being evolved. The results marked B were obtained under the following conditions:—The fire-bars were about half an inch thick at the top, and as thin as possible at the bottom, with the ends thickened so as to leave about five-eighths, or three-quarters of an inch air space. The fire-doors were of the ordinary kind, but perforated with horizontal slits about half an inch wide and fourteen inches long, for the admission of air. The mode of firing consisted in applying the coal in charges of one cwt. each, placing it first upon the dead plate, which was sixteen inches deep, and leaving it there until, when it had lost to a great extent its hydrocarbons, it was pushed forward into the fire. The grates were kept covered with fuel to the depth of ten or twelve inches, and the furnaces worked alternately, as far as possible. The cinders falling through the grate were raked forward and thrown on the fire, so that the average amount of ashes did not exceed 1.1 per cent. of the coal used. The amount of clinker averaged about 1.85 per cent. of the coal used. No stoking was adopted beyond occasionally raising the coals before firing, and the heap of raw coal on the dead-plate kept the fire-door quite cool.

These arrangements, which are characterised by great simplicity and freedom from liability to derangement, were found to be perfectly efficacious in preventing smoke, while requiring only an ordinary amount of attention, and much less labour than is exercised in the manner of working such furnaces.

The means by which perfect combustion of the coal was ensured, was merely an adaptation of the principle so long advocated by Mr. C. W. Williams, and is preferred by the authors of the report to the cast-iron casings placed in front of the furnace, according to the plan proposed by Mr. Williams.

The several plans sent in for competition were classified according to the principles which they involve; and with regard to the adequacy of these principles the authors of the report express very decided opinions.

Of the hundred and three plans submitted for competition only four were selected for trial, and of these three were different modes of admitting cold air into the furnace at the fire-door or bridge, while the other one consisted in a peculiar arrangement of furnace. The principle of this latter plan, proposed by Mr. Robson, of South Shields, was the division

of the fire-place into two parts, with distinct fire-grates; the one in front being without a bridge, the one at the back being shorter, and at a lower level. Both had regular door-frames and doors, that of the back grate being furnished with a throttle-valve and a perforated distributing box for admitting air. In working this furnace the coal is at once thrown on the front grate, and the back grate is kept charged with cinders. Air is admitted through the front grate and through the door of the back grate, so as to meet and burn the gases passing from the former, while passing over the bright fire on the small grate. As regards prevention of smoke, this arrangement was found only partially successful, and it required much attention in working.

Of the plans based upon admission of air only, that of Messrs. Hobson and Hopkinson, of Huddersfield, consists in using fire-doors with vertical slits that may be closed by sliding shutters; while behind the bridge there are hollow brick pillars, through which air is also admitted by throttle-valves as required. Masses of brickwork are also placed in the flame-chamber, so as to ensure mixture of the gases and air. This plan was very efficient in preventing smoke, but in hard firing the furnace required much attention from the stoker.

Mr. Williams's plan of placing casings, furnished outside with apertures and movable shutters, and perforated inside with half-inch holes, the coal being applied alternately at opposite sides of the furnace, was found to be perfect as regards prevention of smoke, while little labour and no particular attention was required from the stoker.

The fourth plan, proposed by Mr. B. Stony, of Dublin, was identical with that of Mr. Williams as regards admission of air; he also adopts a shelf outside the boiler, and forming a continuation of the dead-plate, upon which the fresh coal is placed, one-half of the heap being outside, the other half inside the furnace. The fire-door is in a sliding frame and shuts down upon the heap of coal, so that air passes through the heap of coal into the furnace, as well as through perforations in the front plate. This plan was not found to succeed in preventing smoke, large quantities being evolved when the coal was pushed forward into the fire.

The results obtained in the experimental trials of these plans, as compared with the standard results, are shown by the following table:—

	A. Standard.	B.	Robson.	Hobson and Hopkinson.	Williams.
Area of fire-grate in sq. ft.	28.5	28.5	32.5	27.5	22
Economic value of fuel	9.41	11.15	10.27	11.08	10.84
Rate of combustion per hour for each square foot of fire-grate	21.15	19.00	15.22	14.25	26.98
Rate of evaporation per hour for each square foot of fire-grate	6.62	2.93	2.14	2.18	4.04
Total evaporation per hour in cubic feet from 60° F.	74.80	79.12	69.52	60.18	89.96

It appears from this table that Mr. Robson's plan effected an increase of economic value to the extent of 13.7 per cent. over the standard, but there was 5.8 per cent. less work done by the boiler, although the fire-grate was 14 per cent. larger; the rates of combustion and evaporation being respectively 26.7 and 18.4 per cent. less than the standard. This result is ascribed to the large admission of air through the fire-door of the back grate, necessary to prevent smoke, and the consequent sluggish combustion of the fuel on the front grate. Moreover, the generation of heat was thrown too near the tubes, and the opportunity of absorption thereby diminished.

By Messrs. Hobson and Hopkinson's plan there was an increase of economic effect to the amount of 17.1 per cent., but 19.8 per cent. less work was done, the rates of combustion and evaporation being 32.7 and 16.8 per cent. less than the standard. The brickwork arrangement was not considered to be of much consequence. The plan was pronounced applicable to all usual forms of boiler, the combustion being good, and, with moderate firing, not much dependant upon the stoker.

The results with Mr. Williams's plan give a large increase over the standard in every respect. The economic value is 11.5 per cent. greater, and the work done 13.5 per cent. greater, the rate of combustion 27.4 per cent., and the rate of evaporation 54.2 per cent. greater. The prevention of smoke was perfect, even when burning 27 lbs. per square foot per hour. In another experiment with Mr. Williams's plan the economic value obtained was 11.70, and the total evaporation 61.59 cubic feet, with a 22 feet fire-grate.

	A. Standard.	B.	Robson.	Hobson and Hopkinson.	Williams.
Area of fire-grate in sq. ft.	19.25	19.25	18.25	18	18
Economic value of fuel	10.06	12.58	11.70	11.30	11.30
Rate of combustion per hour for each square foot of fire-grate	21.00	17.25	21.50	27.36	27.36
Rate of evaporation per hour for each square foot of fire-grate	2.909	2.995	3.49	4.31	4.31
Total evaporation per hour	56.01	57.78	63.62	76.92	76.92

This table shows that a decided increase in all respects is effected by the small grates on Messrs. Hobson and Hopkinson's plan; the economic value being 16.3 per cent. greater, and the work done 13.5 per cent. greater; the rates of combustion and evaporation being 2.3 and 19.9 per cent. over the standard.

This effect is still more marked in the results obtained with Mr. Williams's plan; the economic value is increased 12.3 per cent., about 2 per less than by Messrs. Hobson and Hopkinson's plan, but the amount of work done is much greater, being 37.3 per cent. over the standard; and the rates of combustion and evaporation being 30.3 and 48.0 per cent. above the standard. In one experiment on his plan, with a fire-grate 15.5 square feet, the rate of combustion was as much as 37.5 lbs. per hour, and the rate of evaporation 5.5 cubic feet of water per hour for each square foot of fire-grate, without producing smoke. It is also pointed out as an important feature of Mr. Williams's system, that it may be successfully applied under very varied circumstances.

The results given under B exceed in economic value of fuel all the others, especially with the small fire-grates, and this is ascribed chiefly to the slower rate of combustion, which admitted of a more complete absorption of heat, so that the products of combustion escaped from the chimney at a temperature 200° lower than they did in the other trials; however, this increase of economic value is obtained at the expense of work done.

With regard to the grounds upon which the plans involving other principles of action were passed over, it is remarked that the absence of smoke is no sign of perfect combustion, and invisible gases may be passing away unaccounted for want of a sufficient supply of oxygen, and thus a loss of heating effect becomes apparent in the evaporation produced. In practice this effect, or visible smoke, is always produced whenever the air is supplied solely through the fire-grate. This is the consideration which induced the experimenters to give the preference to the plans which provided for admission of air into the furnace otherwise.

Among these plans are some for using hot air, but none of these were tried, and the use of hot air is dismissed, with the remark that the experimenters were convinced that if there were any advantage to be gained by heating the air prior to its admission into the furnace, the plan involves such practical inconveniences, that preference was given to the use of cold. Now, the conviction entertained by these gentlemen may be very correct, but we must confess that we should have been better satisfied if a trial of this plan had been made; and if the result had been negative it would have been satisfactory to the experimenters, as a confirmation of their views, and to the competitors who adopted this principle, as showing that their plans were not dismissed from consideration without the test of practice, and merely upon the ground of opinion, however correct that may be.

The relation of the results, upon the whole, to those given by the Admiralty reports on the use of coal in steam navigation, are such as to show the utter inutility of the data there given as representing the value of different kinds of coal. Thus, while the Admiralty reports give to Welsh coal a higher evaporative value than Newcastle, the experiments of Messrs. Armstrong, Longridge, and Richardson, give a directly opposite result. In their third report they endeavour, by means of Dr. Lyon Playfair's explanation, that the results were only intended to be relative, to arrive at some diminution of the disagreement, but the attempt is not attended with any better result than the bare comparison of the respective results. It seems altogether impossible to unravel the tangle of inaccuracy and contradiction that surrounds the results given in the Admiralty reports; and, therefore, the best way is to put them aside, as useless for any other purpose than to serve as a warning to others not to pursue science in like manner, and as an illustration of how empty a thing may be respected as an authority and a guide, and how evidently this result is due to a want of general sound scientific culture among our practical men.

To Mr. C. W. Williams belongs the credit not only of having supplied

a remedy for the evil which rendered the practical results obtained with Newcastle and similar coal, less than they should have been, but also of having perceived the radical defect of the Admiralty reports, and directed his endeavours to substitute in their place data that might be trusted. For this, indeed, we must still thank the Admiralty investigation, for Mr. Williams's remarks in a recent letter, that he "was further induced to take an interest in the matter in consequence of observing the grave error enunciated by Prof. Playfair and De la Beche in their several reports on the use of coal for the steam navy; and duly appreciating the serious consequences of the Admiralty and engineers in general being led astray, he felt anxious to aid in having the subject placed on a more trustworthy basis."

THE MINING AND INDUSTRIAL INTERESTS OF CORNWALL.

[FROM OUR CORRESPONDENT IN WEST CORNWALL.]

FEB. 11.—The continued upward tendency of the standard is very encouraging to mine shareholders, who are now every week seeing their property advance in value. There are some who say that the advance is too rapid to be lasting; but when we look at the various circumstances by which it is attended, there does not seem to be any reason to adopt this opinion. Besides the growing demand for copper, and the decreased production of the Cornish mines, there is also to be taken into account the circumstance that the present cheapness of money gives the smelters facilities for holding larger stocks, and for retaining those stocks for a longer period, so as to realise better prices from consumers. Hence the smelters are now eager to buy, and as the demand for copper is likely to increase in activity as the spring approaches, they are willing at the present time to give good prices. Another advance of 1d. per lb. has taken place this week in copper, and cake copper has gone up to 126s. per ton, being an advance of 18s. 10s. per ton since Jan. 21. The standard for copper ores may now be expected to go still higher. It is already a very good standard, having advanced last week about 4d. beyond the preceding week, and since the beginning of the year the whole advance has been to a very considerable amount, as the following figures will show:—

	Tons.	Standard.	Produce.	Price per ton.	Ore copper.
Jan. 7	3492	£126 8	6%	£5 8 6	£53 19
" 21	4018	130 13	6%	5 11 6	57 11
" 28	3218	134 11	6%	6 2 6	97 17
Feb. 4	3574	140 14	7%	7 1 6	101 8

The price given by the smelters to the miners each week for as much ore as would make a ton of fine copper, is represented by the figures headed "ore copper." On comparing the sales, Jan. 7 and Feb. 4, and allowing for the difference in produce, it appears that the standard has gone up, between those two dates, to the amount of about 17s. 14s., and the price per ton of ore has advanced 23s. Thus the sale of 3574 tons, which took place last week, made 4225s. more than the same ore would have sold for on Jan. 7. This is, certainly, a fact to stimulate the advance of shares, as clearly showing how much more profitable copper mining must now be than it was at the opening of the year.

It has before been noticed in the Journal that the ticketing figures are not always so correct as they should be. An instance of this occurred last week. The sale was 3574 tons, which made 25,876l. 2s. 6d. If any person will take the trouble to divide the amount by the number of tons, he will find that the price per ton comes to 7l. 0s. 10d., which, however, the ticketing gentlemen have elevated into 7l. 1s. 6d., thus making the price per ton look somewhat better than it actually was. Although the difference is not much, it is a matter of importance that the Ticketing Paper should be strictly correct.

The price of tin again advanced this week 5d. per ton, making an advance of 20s. since the beginning of the year. It is curious that when the tin smelters were lowering the price (consequent on the commercial panic), they went down by 6d. per ton each decline. They now rise by 5d. per ton each advance. They seem to be afraid they shall advance too fast, and, therefore, are more cautious than they were in dropping the price. However, the total advance since the beginning of January is very gratifying, and has placed the tin miners in a much better position. The increase of price is equal to at least 12l. per ton on black tin; and, as an example, Dolcoath Mine, which produces about 50 tons of black tin per month, will profit 600l. more per month than if the tin had been sold before the rise took place.

The shares in most mines have advanced more or less, and the enquiries are numerous. West Seton Shares have gone up, and the mine continues to be very productive. Copper Hill shares have been in some demand, the mine having improved. West Damsel is looking well at Michell's shaft, and in the bottom levels east and west; the shares have an advancing tendency. At Great South Tolgus, the stopes and pitches are very productive, and the mine looking well at certain points. South Frances shares have been going up during the past week. Wheal Bassets have gone up to 200l.; at the beginning of the year they were 150l. and 160l. The shares of South Bassett have also advanced. East Bassets remain at about 100l. Gramblers have participated in the rise of the market, and the mine is looking very well. Wheal Seton is just paying costs; at the meeting the balance in favour of the mine was reduced from 735l. to 717l.; the improved standard will soon enable the mine to show a better state of accounts. Tolvaaden Mine is stated to be doing well, with good prospects. At Dolcoath meeting the mine appeared to be 2667l. in debt; but the tin stocked amounts to 60 tons, valued at 3902l., and is now worth 200l. more, in consequence of the rise which has taken place in tin this week; so that if this tin were sold there would be a balance in favour of the adventurers of more than 1200l. The mine continues to be very productive, and the reserves are of great extent and value. Providence Mine is also looking well, and shares have advanced to 80l. Wheal Kitty shares have an upward tendency. Shares have gone up in Wheal Margery, owing to the better prospects of the mine. Wheal Margarets have risen to 68l. In consequence of the improved state of the mining market, it is likely that several new sets which have been taken up will soon be introduced to the public.

The Cornish landowners have made a move in the right direction, by coming forward in support of a County Agricultural Society. For many years small district societies have existed in different parts of the county, but their funds have been too limited to admit of their giving adequate premiums to encourage competition amongst the breeders of farm stock and the manufacturers of implements. The society established for some years at Truro has now been formed into the "Royal Cornwall Agricultural Association," which will migrate to different parts of the county in succeeding years, and hold extensive exhibitions. The first exhibition will be held in a few months, when upwards of 3000l. will be offered as premiums. It is pleasing to see that some of the principal landowners of the county are coming forward in support of this society, which seems calculated to stimulate improvement in Cornish agriculture.

REPORT FROM NORTHUMBERLAND AND DURHAM.

FEB. 11.—Trade still continues dull in these counties. Coal freights from Newcastle Quay to London have receded to a point nearly as low as ever was known, some having been taken at 5s. 4½d. per ton. It appears also that a great number of seamen are out of employment in our seaports, and their circumstances are deplorable.

Meetings have often been held of late to advocate the removal of passing tolls and other burdens on our coasting shipping; and, no doubt, some of them press heavily enough on the shipowner. However, there appears to be no prospect that the River Tyne Commissioners and the Corporation of Newcastle will come to terms with respect to the purchase of the Town Dues on coals, as the latter ask just as much more as the former are willing to give.

It is reported here that Mr. Josh. Pease, of Darlington, has purchased 40,000 tons of iron of the Consett Iron Company; at any rate, it appears that strenuous efforts are making to put the Consett Company in a position to meet some of the enormous liabilities owing by it to the Northumberland and Durham District Bank, in order to avoid further exposure. A very large number of men are employed at these important works, and great alarm has been felt since the stoppage of the District Bank lest that occurrence should disturb the working of this and other large works.

I am sorry to notice that a misunderstanding has taken place between the workmen and their employers at the Gosforth Colliery, which has resulted in a strike. This is an exception to the general rule, that improved terms exist between the men and their employers in this district; and it really appears to be a piece of mere obstinacy between the parties, as the point at issue is only 2d. per score, and, as the score amounts to

six tons, it is less than 3d. per ton. This small difference will not, it is to be hoped, cause a long struggle.

A general meeting of the North of England Institute of Mining Engineers was held last week, at the rooms of the society in Newcastle, and the proceedings were, as they generally are, very interesting. A patent India-rubber valve for pumps was shown. A Frenchman also exhibited a ventilating fan, which excited a good deal of interest, as everything connected with that important branch of mining science deserves notice; and also a long and extremely interesting paper was read by Mr. Plews, on "The Coal Field of New South Wales."

This, I believe, the oldest institution of the kind in this country, and it is gratifying to notice that others of a similar kind have sprung up in different parts of the country, and also mining schools.

This is certainly one of the signs of times in relation to mining, and the establishment of such institutions may, we think, be justly considered as the inauguration of a new era; this new era to be characterised by the joining together of whatever is practical, good, and sound in mining knowledge with a knowledge of all the sciences which bear on subjects connected with it. It is obvious that this must be the tendency of such institutions, and, therefore, all interested in the progress of mining must wish them God speed.

This Northern Institute is ably presided over by Mr. Nicholas Wood; and there has been at different times some discussion on the subject of establishing in Newcastle a "Mining College." The Government has been applied to for assistance in this object, but it proceeds so slowly, that really it is to be feared it has got into the Circumlocution Office. Certainly the situation of Newcastle is excellent for a mining college, surrounded as it is by the most extensive collieries, established and worked on the best principles. If such a thing were formed, and also mining schools formed in the district as feeders to it, it is scarcely possible to over estimate the advantages that might accrue; for it is assuredly one of our most crying wants—the communication of scientific knowledge to our practical miners and managers.

THE IRON AND METAL TRADE OF SOUTH STAFFORDSHIRE.

[FROM OUR CORRESPONDENT IN WOLVERHAMPTON.]

FEB. 11.—The Iron Trade continues in pretty much the same state. In the absence of large orders for bars, some makers have taken contracts for rails, by means of which they are able to keep their works in fair operation. Probably these contracts involve in most cases the acceptance of somewhat lower rates than the trade price of bars, 8s. per ton. Some improvement in the continental demand is also experienced. The large Hamburg house of Schulte, Schumann, and Co., which was forced to suspend payment during the severe monetary crisis in that city, has issued a very satisfactory statement, showing a considerable surplus after meeting all their liabilities in full. They will doubtless resume business with undiminished credit—their temporary stoppage having been the result of a sudden and wide-spread panic.

From America very few orders are received at present. It is suggested that heavy consignments of iron to that country made by some of the insolvent firms, who received advances on them, are being sold at low prices, and must be got rid of before the ordinary demand for iron can be experienced.

In spite of the large number of blast furnaces blown out, pig-iron is dull of sale. Makers of best quality still ask 3s. 12s., but large buyers whose paper is equal to cash, can purchase a good hot-blast pig at from 3s. 12s. 6d. to 3s. 7s. 6d.

The notices for the reduction of colliers' wages west of Dudley expired on Saturday, and judging from the great number of colliers out of work, the number of works that are standing, and the general depression, the men will act very unwisely if they resist the drop.

The puddlers' strike is over, and in two cases at least, where 6d. per ton extra was paid on the understanding that the men would not take part in general combinations, this extra 6d. has been taken away on account of the men standing out, and they had been reduced to the general level of 8s., making a reduction of 1s. 6d. per ton in their case.

In the general trades of the district recovery is very slow. The lock trade is generally flat, and the tin trade only gives faint signs of improvement. The further rise of 9s. per ton in copper, declared on Monday, will not tend to improve the demand for locks. The advance in tin was more generally anticipated, and fully justified the refusal to reduce prices in January last. A general scarcity of orders is experienced in the numerous minor hardware trades of Birmingham, and probably the improvement will only be slow and gradual.

The inquests on the bodies of the two butchers killed last week at a colliery near Dudley by the breakage of a rivet in the chain by which the skip was suspended, terminated on Monday and Tuesday. The chain was what is called a "rivet chain," three flat links, having two similar links placed between them, with flat pieces outside, connected by a single rivet, which passes through seven separate thicknesses of iron.

The following are the remarks of Mr. Brough, the Government Inspector, on this point at the inquest, in which the ground bailiff at the colliery, Mr. Edward Aston, fully concurred:—"I do not blame Messrs. Badger for using it, as they are of opinion that the rivet chain is the best kind of iron band; but my opinion is that rivet chains are the most dangerous that can be used for lowering and raising men. They are not three-linked chains—they are a series of three links, and a rivet, *ad infinitum*, for the whole length of the chain. They are, in my opinion, worse than a single-link chain, because you can examine the latter; but rivet chains cannot be examined without one of the rivets heads being cut off. I have always objected to this class of chain wherever I have met with them, and Mr. Edward Aston, the bailiff of this pit, has often heard my opinion expressed. Mr. Badger and Mr. Richard Smith, of the Priory, consider the rivet chains best; but with mechanical men they will not bear enquiry at all. I recommend the use of the wood chain, so commonly used in Staffordshire, or hemp flat ropes, or wire flat ropes. These are the best known. Wire ropes are getting very much into use throughout the world; I however, prefer hemp rope. The wood chain consists of a continuity of three links, and danger in them may be discovered at once; whereas danger may lie concealed at any point of the rivet chain, without the possibility of detection. With your leave, I will lay the matter before Mr. Badger, who I am sure is very anxious to save the lives of his men." The great advantage of the wood chain, so called from a flat piece of wood passing through the intervening links and holding them together, is that they are equal to three independent chains, and there is no rivet-link between each other, like those of an ordinary chain. The verdict in each case was "Accidental Death," but the jury strongly reprobated the use of rivet chains.

It is an incident worthy of mention in any reference to the iron trade, that the present High Sheriff of Staffordshire, Mr. Philip Williams, who took the oath on the acceptance of that office yesterday, is the Chairman of the Ironmasters' Association, and is the second ironmaster—the late Mr. John Parker being the other—who has been elevated to this ancient and honourable office.

REPORT FROM YORKSHIRE, DERBYSHIRE, AND LANCASHIRE.

[FROM OUR CORRESPONDENT IN CHESTERFIELD.]

FEB. 11.—Though the position of the money market would lead to the belief in a rapidly improving trade, the progress towards improvement is slow and tedious. The orders for the home trade this week are reported to be rather more numerous for manufactured iron.

The strike of the puddlers employed at the Milton Ironworks still continues without any immediate prospect of abatement, causing much misery and deprivation in the district.

The Coal Trade is generally dull, and in the South Yorkshire district a reduction in wages has been declared, which has led to a strike. The others employed at Westwood have accepted the reduction of 10 per cent. The Woolley Coal Company's men have only partially accepted the reduction. The colliers in the West Yorkshire district are working on the same terms as last week. No alteration has yet been made in the rate of wages, although the coal masters have been making a subject of conversation, and the men themselves are anticipating something taking place in the form of reduction. The coal gettings in the neighbourhood are fairly remunerated, most of them receiving from 5s. to 6s. a day, with coal free. There are at present no signs of improvement in the trade of the district. All the large collieries in the district are very slack, and have on hand large stocks of unsold coal. Prices have not fluctuated much lately.

About 2000 men are thrown out of employment in the neighbourhood of Middlesbrough, owing to the strike of the puddlers. This has caused great destitution, and whole families are almost in an utter state of starvation. On Friday the puddlers held a meeting, and agreed to accept a reduction of 10 per cent. and no lower.

Derbyshire lead mining continues on the increase, and within the past few weeks a new mine, called the Peak Forest, has been purchased by a company principally resident at Sheffield. The mine was formerly called the Coal Pit Hole, but modern taste has refined the title a little. The property was purchased for 5000l., and the owner has subscribed for 50 shares. The machinery, it is estimated, will not cost above 2000l.; and as coals are only seven miles distant, at Whalley, it is thought the mine has good prospects of success. The shares at 2000l. each, were all taken up by the promoters and their friends, and now they are quoted at 2l. premium.

Another new mining company has been commenced in Yorkshire, called the Netherdale Lead Mining Company, and the following is the opinion of Mr. Bentley, of Stoney Middleton, who has some personal knowledge of the property:—"Agreeably to your request, I beg to submit my opinion of the merits of your contemplated scheme for opening out an extensive field for mining operations near to Pateley Bridge, and immediately adjoining the Prosperous and Providence Mines. My past experience of these mines, the result of practical knowledge and strict observation, proved to me their vast richness and value. The Prosperous Mine at its commencement produced a large amount of lead ore unaltered by machinery. It was afterwards wrought by the aid of a water wheel as far as its power was available, and continued to be no less valuable. The Providence Mine (which is contiguous to and upon the same veins as the Prosperous) was equally good, and was worked with a steam-engine, which became inadequate from the great increase of water. The Prosperous and Providence veins continue their course in an easterly direction, having the same bearing strike, and crossing Green Moor and Hole Bottom run the entire length of your ground, being about 2000 yards of vein. This, therefore, presents a valuable field for mining adventure, which may be unwatered and worked by means of the Prosperous main level, already driven in your ground 400 fms. to the westward, with a branch extending north-westward on the Prosperous and Providence vein for about 250 fms. Many promising and valuable veins lie to the westward, and will be intersected and relieved from water by the extension of the main level in that direction, and may be explored by cross-cuts therefrom without the aid of steam-power or other expensive machinery. In such ground, aided by its natural advantages, I can have no hesitation in stating that spirited operations, followed up with judicious management and strict economy, will result in great profits, and

benefit capitalists desirous of mining investments, and that at a much less outlay than is necessary in ordinary mining operations."

The Mill Town Mine, at Ashover, has become very rich, as we predicted it would for some time past. The shares have in consequence become much in request, and are considerably dearer. There has been a sale of ore at the mine to-day, but we could not learn the amount weighed up to our present writing. The profits on the last three weeks' working was estimated at 3500l. A great quantity of ore has been left over for the next measure; the men can get it much faster than it can be dressed and prepared for the market.

The committee of the North Derbyshire Mining Company were to meet to-day, to decide finally whether they would purchase the large engine from the Bowling Iron Company, the price for which, fixed at Calver, is about 22000l. We believe it was the intention of the committee to purchase it, and to have it erected with all possible dispatch. An unfounded report has obtained currency in Sheffield respecting a contemplated law suit between the Mill Dam Mining Company and their neighbours, the Hocklow Mining Company. Nothing is further from the truth, the Mill Dam Company being resolved to work amicably with all parties. The Mill Dam Company are opening a level which has been closed for 300 years to let off the water into a swallow in the ground of the Hocklow Mining Company. Should the additional influx of water operate prejudicially to the Hocklow Company, the Mill Dam Company are prepared to meet them in a liberal but not in a litigious spirit. Great progress is made in the opening of this old level, and already there are indications of its opening out a rich mineral field.

REPORT FROM MONMOUTHSHIRE AND SOUTH WALES.

[FROM OUR CORRESPONDENT IN SOUTH WALES.]

FEB. 11.—A partial improvement has taken place in all departments of the metal trade this week. Shippers are in better spirits, and coal owners look forward with more hope, and on juster grounds, than they have been able to do for some months past. In every part of the district we may look forward to a recovery from the recent depression; and although it may be some time before activity is completely restored, we are confident some approach to it will be arrived at shortly. The docks at Swansea and Cardiff are getting full, and considerable shipments are being made of steam coal. The improvements and enlargements are going on rapidly, and at Swansea new ballast cranes have been fitted up, and gas placed at the coal drops—both great conveniences. The Newport dock is on the verge of completion, and will be opened, we anticipate, on the 23d or 24th inst. It is nearly twice the size of the old one, and will accommodate about 100 vessels of the largest tonnage which visit the port. Great rejoicings are to take place on the occasion—public dinners, processions, illuminations, and a variety of other demonstrations are in preparation, and will inaugurate the increased facilities given to the commerce of South Wales.

There is still a great deal of distress among the miners of Monmouthshire, and many are in an almost starving condition. Families have nothing beside a few shillings a week to subsist upon, and we have heard very sad accounts from many quarters. Those who can find work can barely support themselves, and of course the unfortunate who only procure occasional employment are reduced to the greatest destitution. At present there has been no general subscription on their behalf, though thousands stand sorely in need of assistance from the wealthier classes.

A strike continues among the men in the Rhondda Valley, Glamorganshire, where the 3 ft. vein is worked. The proposed reduction is 3d. a ton, and against this a determined stand is made. It would be idle to offer any remarks on this occurrence, since it must infallibly issue in the same result we have recorded of all the other strikes in every part of the district.

An unpleasant sensation has been created at Merthyr by the circumstance of a colliery agent having been shot accidentally by a policeman. The deceased's name was Thomas Ford, and he was employed at the Brithdir Colliery, under Mr. Crawshaw Bailey, who was the mortgagee. He had been in possession about four weeks, and on January 12 was sitting in an office with one of the Glamorganshire constabulary, and an agent named William Lintine. This witness thus described the incident which led to the accident:—"John Prothero, one of the underground agents of our colliery, was about to return home, and asked me to let him have the revolver to take with him. I replied that I would, and I took the key from the table whilst putting on his coat; the policeman happened to take it up in his hand, and it went off unexpectedly—the deceased sitting on one side of the fire, and the policeman on the other, and the ball struck deceased and penetrated the right breast. I had not been out of the office more than a minute and a half at the time. There was no anger or dispute whatever between the parties. At this time the colliers in the neighbourhood were out on strike, and the owners of the colliery had sent us the revolver, in consequence of some intimations that had been made; and I always kept it locked up except when it was used." Deceased before he died repeatedly said that the man who shot him "could not be blamed, as it was an accident." He died on the 5th inst., leaving a wife and five children. The jury on the inquest returned a verdict of "Accidental Homicide."

THE COAL TRADE.

The following is a statement of the delivery of coals, &c., in the port of London during the month of January:—

	Ships.	Tons.		Ships.	Tons.
Newcastle	275	95,693	Scotch	5	1,127
Seaham	93	24,828	Welsh	27	7,088
Sunderland	151	57,336	Yorkshire, &c.	54	5,936
Middlesbrough	29	6,596	Liverpool	—	—
Hartlepool & West Hart.	169	49,990	Small and cinders	10	533
Blyth	10	2,092			
Total		254,113			
Total imported in Jan., 1857		265,870			

THE RAILWAY COAL TRADE.

Monthly statement of coal and coke brought by railway and canal within the London district, during the month of January:—

Railways.	Tons cwt.	Railways.	Tons cwt.
Great Northern	53,691 15	South-Western	600 12
North-Western	49,243 6	South-Eastern	3,957 2
Eastern Counties	9,720 0	London, Brighton, & S. Coast.	—
Great Western	2,857 10	London, Tilbury, and Southend	16 0
Total by railway in Jan., 1858	119,186 5		
Coals by railway in Jan., 1857	127,977 9		
Coals by canal in Jan., 1857	2,579 10		

MINERAL WEALTH OF NEW ZEALAND.—GOVERNMENT ENCOURAGEMENT OF ITS DEVELOPMENT.—The Provincial Government of New Plymouth have taken praiseworthy steps for inducing the development of the iron trade of the colony, which will, no doubt, prove highly important in aiding the advancement of mining generally in New Zealand. A reward of 1000l. for the production of the first 100 tons of merchantable wrought or cast iron, manufactured in New Plymouth from the "iron sand" of the province. The conditions are—That a committee of three persons will be appointed by the superintendent for the purpose of reporting upon all claims which may be preferred for the reward; that it must be proved to the satisfaction of the committee that the manufacture can be successfully and profitably carried on; and that the reward must be claimed before July 1, 1860. It will be remembered that the Iron Sand Committee have long been striving to render the sand valuable, and that during the time that Major Lloyd was chairman a report was adopted, in which Government encouragement, in the way of rewards, was recommended; and while Mr. Josiah Flight was chairman a reward of 1500l. was offered by the committee themselves for smelting the sand successfully and profitably—this was to be claimed by April 14, 1858, but had not a few months since been awarded. The sand is similar to that which the Swedes make their best steel of, and analysis shows that it contains 72½ per cent. of iron.

COST-BOOK LAW.—HYBART v. PARKER.—HYBART v. EVENS.—On Wednesday last, the Court of Common Pleas gave judgment in the above cases for the defendants. These actions were brought by Hybart, the purser of the East Birch Tor Tin Mine, against Parker and Evens, two of the adventurers, for payment of calls. These being the first attempts to sue at law for calls made by a cost-book company, the cases are so peculiarly interesting, that we have made arrangements to lay before our readers authentic reports of them as early as possible. We sympathise with the mine and the purser, because, as the actions were brought in the name of the latter, he has become liable to pay to the defendants a very serious amount of costs, to discharge which the adventurers are not bound to contribute. It is impossible not to feel that Mr. Hybart is in a very disagreeable position. A Mr. Norrish, a mine creditor, is now suing the same defendants in an action, which is likely to be tried at the ensuing assizes for Devonshire.

RAILWAYS IN AUSTRALIA.—On former occasions we have alluded to the extraordinary receipts of some of the railroads in Victoria. By the present official returns from that colony we find that the traffic receipts on the Melbourne and Hobson's Bay line for the week ending Dec. 3 last amounted to 21568.18s. 7d., while on the following week, ending the tenth day, they were 14881.11s. 6d., giving thus an average weekly return of 18224.15s. The entire length of this line, being only a mile and a-half, gives a total return of 13677.6s. 3d. per mile per week, while English lines average only 47l. per mile per week. The dividend declared on Dec. 1 last was at the rate of 14 per cent. per annum. The St. Kilda line also exceeded the sanguine expectation of the proprietors; the carriage accom-

modation, although large, having proved quite insufficient to meet the increasing passenger traffic. The Geelong and Melbourne line, being only partially opened, the returns are not published, though considered satisfactory; it was fully expected to be highly remunerative when completed to Melbourne, and with projected branch lines as feeders, to be as successful as any other railway undertaking in the colony.

GOVERNMENT SCHOOL OF MINES.

The lecture, by Mr. WARRINGTON SMYTH, was on "Natural Ventilation."

In sinking a shaft it is not necessary, where it is made in a miner-like manner, until it has been worked to some depth, to introduce artificial ventilation. In deep wells they were aware carbonic acid gas is likely to arise, and this often occasions accidents. In natural ventilation there is this evil—that the ingoing and outgoing currents come in contact. Another important point to be considered is the change of the seasons, and other natural phenomena. The difference of the temperature, in many instances, to a certain distance is invariable; in caves, rustics often say that these are cooler in summer and hotter in winter than the outer atmosphere; and here do not look to the actual phenomena at surface, which accounted for this change. In metalliferous mines, especially in Cornwall, there was a difference of the temperature between the surface and the interior of the mine, and this was due to the fact that the air was cooler in the interior than in the exterior. An average of the temperature had been taken in England, Saxony, Mexico, and Siberia, and it was found to increase 1° of Fahrenheit to 60 or 70 fms. in depth. An instance of a mine was then given, showing how the temperature augmented, which was illustrated by diagrams. In summer, when the external air is warm, and there is a column of air acting upon the two shafts, in the warm season one of the columns will be lighter than the other, and thus the heavy column will counter-balance the lighter one; such a tendency of the one column to balance the other will require a fresh current of air. This was illustrated by a diagram. In the winter time, the column of air again; here the external temperature being colder than the interior the column which was heavier in the summer will be lighter in the winter: there is a tendency for the warmer to rise and the colder to descend. The average temperature of London in the winter is 39.5, while that of Edinburgh is 34.5; in the summer it is in London 63, and in Edinburgh 53. From this they might form a pretty accurate judgment of the temperature in the northern and southern districts. At certain periods of the year, the autumn and spring, there will come a slackness. In collieries, often in one spot they could work with candles, there being little gas and a fresh air; while probably about half a mile off the gas passing old workings would be evolved, and the men would be obliged to work with lamps. If slackness then occurs, it will come down the upcast, pass the lamps, and carry on to where the candles are, an explosion being liable to take place; this is not an hypothetical case. In the midland counties, where two currents of air meet, it is called technically the "fighting of the pit;" and sometimes on this account the work is delayed for several days. In South Staffordshire, in many cases, the shafts are placed at nearly the same level; in some instances, over one a stack for the purpose of ventilation is built, some 30 or 40 feet above the ground level. It may be important sometimes to place these over the shaft, as it may impede the winding; the method, then, is to place a small door over the shaft, then from the side of the shaft to carry out a drift communicating with a small shaft, and erect the stack at a little distance. Much of the different inclinations at placing the shafts depended upon the physical properties of the country. Occasionally for ventilation they put over the heads of the shafts coals, something like those they could observe over the tops of chimneys in London. In some of the small mines in Flintshire and the north of England on the top is placed a barrel, with a hose to keep the water from the wind, and the New South Wales collieries for the most part the cowl was used, but now it is going out of use. There is in general a great inconvenience in having two shafts together, whether natural or artificial ventilation is considered. This was shown and illustrated by a diagram. The great inconvenience of this could be seen in a London drawing-room, where the fire was lit in one room, and after ascending to the roof, the rush of cold air would force it down to the adjoining chamber, and to the great discomfort of the housekeeper, fill the apartments with smoke. In order to improve natural ventilation, it is necessary to separate the columns of air as much as possible; in some cases this is done by putting a partition of wood, or made, which is called a brattice, and by this means a very large area can be ventilated. In other cases an extraneous shaft is made at the side with a brick wall; this may do for small works, but it is questionable whether it would be applicable for establishments on a large scale. The plan of Mr. Benjamin Gibbons, of South Staffordshire, was then illustrated by a diagram. Where brick walls were placed these were liable to be destroyed, as they afforded but very little resistance. Sometimes air levels are built at the sides, in others air tubes are placed either along or at the bottom of the level. The quantity of air sufficient for a couple of men can be driven through a tube of only 4 in. in diameter; these vary in size from 4 to 10 in.; the average diameter of the tubes in the collieries, where education was at a low ebb, there were yet some very defective arrangements, the tubes in these being only a few inches square. The lecturer then pointed out how the current might be directed, either in a shaft or level, so as to reach the breast-work without being diverted; this was illustrated by diagrams. Mr. Nicholas Wood had made some experiments on the temperature of a pit 250 feet deep, where there were two men at work; here there were neither horses or numbers of people, which it is sometimes erroneously stated makes the mine warmer. The run of air was 336 ft., the diameter of the pit was 14 ft., the temperature at the bank was 44°, at the bottom of the downcast was 52.5°, the average difference being 36° Fahrenheit. In an air course 24 feet square 7000 cubic feet would pass in a minute. The Tyne Man Colliery was then referred to. At the Hutton, where the most judicious arrangements were carried out, 160,000 cubic feet of air could be supplied in a minute. In subsequent lecture he should consider ventilation by artificial means.

[In the Journals of March 7 and 14, 1857, will be found condensations of lectures on "Ventilation by Fire, and Ventilation generally," by Mr. Warrington Smyth.]

The lecture by Dr. PERCY was on "Iron." He alluded to what he had stated previously of the various kinds of iron. The limits of variation were between 6.6104 and 7.901. Grey pig-iron is especially lighter than white; the white somewhat less than that of wrought. According to Carsten, the specific gravity of white iron was 7.5, while that of grey, after Scheerer, was 7.1. Next, of malleable cast-iron: this was heated in a peculiar sort of way. It was embedded in hematite, then heated for a considerable period. The chemical changes which took were then described. Prof. Miller, of King's College, had instituted some interesting experiments, both before and after cementation, and they were as follows:—Before specific gravity, 7.644; carbon, 2.8; silicon, 0.937; sulphur, 0.018—in this there was carbon combined, 3.217; carbon uncombined, 0.583; after specific gravity, 7.718; carbon, 0.88; silicon, 0.947; carbon combined, 0.431; carbon uncombined, 0.416. In white iron, the greater proportion of carbon it contains the less it will be attacked by the weak acids. Hydrochloric acid, if very strong, will destroy white iron. There are two conditions of cast-iron, one hard and the other soft; the soft is made by being heated being plunged into water, and cooled rapidly; while that which is soft is allowed to cool gradually. Steel, heated white and plunged into mercury, will become as hard as white iron. When it is hard it becomes brittle, and then it is not so useful for many purposes; it then requires to be tempered, and this operation they could see performed in a common blacksmith's shop every day. They would find great information on this subject in a very useful work, which was Parker's "Chemical Essays." At a temperature of 450° Fahrenheit steel was of a pale straw-yellow colour; it was then useful for razors and chemical instruments. At the temperature of 600° it was cast-iron, blue colour. In the museum there was a case containing the different specimens at the various degrees of tempering; and this he would advise them to study, by observing the grain and the fracture they would be enabled to reap more information than he could afford them by any description. The carbon ranges from 0.01 to 1.9. The transition is gradual from steel to wrought-iron on the one hand, and to pig on the other. The presence of foreign substances is often detrimental to the quality of the steel. The texture of steel he would not enter into, as that they would see from the specimens. According to Scheerer, the specific gravity of steel ranges between 7.6224 to 7.8131; the average may be considered about 7.7. The melting point is between that of wrought and pig-iron. Cast-iron unhardened had a specific gravity of 7.9283; hardened, 7.6375; not melted, unhardened, 8.0023; hardened, 7.7617. By an increased proportion of carbon the hardness is increased, but the strength is decreased; and if iron contains certain portions of foreign matter it may be that less carbon is required. Carsten says, 0.5 per cent. in presence of other foreign matters may be said to carry steel. Cast-iron may be bad for one purpose and good for another; and this idea of bad iron is a very indefinite term. Some iron will do very well for castings—grates and other things—where too much strength is not required, but will not be applicable for other purposes. Pig-iron in general contains a large quantity of silicon. He would now give them an analysis of a "best" "green iron," as it was called. This contained—silicon, 8.57; sulphur, 0.942; carbon, 1.39; sulphur was seldom absent from pig-iron. With regard to phosphorus, this is generally diffused; all our ores from the coal formations contain phosphoric acid. Phosphorus gives fusibility and liquidity to the iron; all the phosphorus is reduced, and passes into the iron; a proof of this is seen by looking at the slag, where you do not find it; occasionally, however, it may be met with there, but this is the exception, and not the rule. Carsten has stated that in iron he did not find arsenic. Lampadius states he has discovered it; and Wöner says that in four instances it has been detected. It has been stated that the famous Swedish iron, as well as that of Low Moor, contains a considerable quantity of iron, but these statements ought to be received in a very guarded manner. They had all heard of the famous Indian steel, manufactured by the natives of that country, called "woots." Mr. Henry had made a careful analysis, and the results were—carbon combined, 1.333; carbon uncombined, 0.312; silica, 0.045; sulphur, 0.181; arsenic, 0.037; iron, 98.002. Iron which was smelted from ores containing zinc was said to be quite free from that metal; and this could be proved, for in an instance that came under his own observation he had proved it. The zinc had been sublimed, and gone off in vapour. Carsten likewise mentions that in some ferriferous calamine that was reduced there were only traces of zinc. Manganese is found very often in the ores; this, however, ought to pass away in the slag. The spathose carbonate of iron contains manganese in a large quantity; the metal when melted contains from 4 to 7 per cent. In many analyses a small quantity of copper is mentioned, but always under 0.2 per cent.; it is said to communicate the property of red-shortness; the same remarks may be applied to sulphur. Aluminium, on the authority of Farraday and Stothard, is said likewise to be present in woots, but Henry, though he sought for it, could not detect it. The presence of lead does not seem to affect iron in any serious manner. Experiments were made by Carsten in Silesia, by adding lead and lithium, but both of these were attended with the same result. Tin and iron melt together, and from them two distinct alloys are formed; the one of tin containing iron, the other of iron mixed with tin. It is said that cast-iron containing tin has a texture as fine as steel, is very sonorous, has an extreme degree of hardness, and takes a fine polish, and is very useful for bells; the warning one at the Great Exhibition of 1851 was said to be composed of tin and iron. Carsten states that 1 per cent. of tin in pig-iron renders iron brittle when cold, but this can easily be forged when red hot. Several spec-

The mail steamer from California, with dates from San Francisco to Jan. 5, brought \$1,565,000 in gold. The most important feature of the news from California is the destruction by fire of the town of Downieville, entailing a loss of about half a million dollars.

LONDON AND NORTH-WESTERN RAILWAY.—Notice is hereby given, that the NEXT HALF-YEARLY MEETING of the London and North-Western Railway Company will be held at the Euston Station, London, on Friday, the 19th day of February, 1858, at Twelve o'clock at noon precisely, for the transaction of the general business of the company; and after such general business is concluded, the MEETING will be held at the Euston Station, for the purpose of considering, and, if approved of, authorising an agreement with the South Staffordshire Railway Company, for the working and use of that railway after the determination of the existing lease thereof, and for giving all needful directions for carrying such agreement into effect.

MADRAS RAILWAY COMPANY.—Notice is hereby given, that the SIXTH ANNUAL GENERAL MEETING of the Madras Railway Company will be held at the London Tavern, Bishopsgate-street, London, on Thursday, the 18th day of February inst., at One o'clock precisely, in conformity with the terms of the Company's Deed of Settlement.

TRESAVERN MINE, CORNWALL.—The adventurers having given notice to determine the sett, under a power therein contained, an opportunity offers for a good company, under spirited management, to work this celebrated mine under a new sett; and arrangements may be made in reference to taking the machinery at a valuation.

GREAT CRINNIS COPPER MINES.—In 6000 shares.—Deposit, £1 per share. On the 1st of January, 1858, the permanent committee and bankers to be appointed by the shareholders, as soon as the share list is closed. The applications for shares will be examined, and approved of, by a provisional committee of known respectability.

DALE MINING COMPANY (LIMITED).—Capital, £21,000, in shares of £1 each; 10s. payable on allotment, and the remainder as may be required. OFFICES.—5, WATERLOO PLACE, PALL MALL.

THE CARDIFF PRESERVED COAL AND COKE COMPANY (LIMITED).—Incorporated pursuant to the Joint-Stock Companies Act, 1856. Capital, £20,000, in 4000 shares of £5 each.—Paid up in full at the time of subscription.

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IN THE COURT OF VICE-WARDEN OF THE STANNARIES.—STANNARIES OF CORNWALL.

NOTICE IS HEREBY GIVEN, that, pursuant to an ORDER, or DECREE, made in the above Cause, and bearing date the 6th day of January last, a PUBLIC AUCTION will be HELD at the Registrar's Office, Truro, on Wednesday, the 24th day of February inst., at Twelve o'clock at noon, for SELLING 100 (THOUSAND) PARTS, or SHARES, of the Defendant Chas. Guerin Manini, 5 (THOUSAND) PARTS, or SHARES, of the Defendant Edgar Cavell Chaplin; and 250 (THOUSAND) PARTS, or SHARES, of the Defendants William Parnell and Alfred Richards (as assignees of the estate and effects of John Paul, a bankrupt).

MESSRS. EVERSFIELD AND HORNE are instructed by the Official Liquidator to SELL, BY AUCTION, at the Auction Mart, in London, on Tuesday, the 9th March, at Twelve o'clock, in One Lot, without reserve, the LEASES held under the Crown of the LEAD MINES known as the ESKAIR MINE, situated in the parishes of Cardiganshire and Brecknock, for its rich metalliferous products (the Llanbriar Mine being in the immediate neighbourhood).

MESSRS. FULLER AND HORSEY are instructed by the Inspectors of the Estate of Messrs. Swayne and Bosvill, to SELL, BY AUCTION, in lots, without reserve, at the Works, Millwall, Poplar, on Monday, the 23rd day of March next, and following days, at Eleven each day, the costly MACHINERY and TOOLS, including a powerful 19 in. centre self-acting lathe, with 20 ft. bed, by Smith, Beacock, and Tannett; a 13 in. centre, double-gear, self-acting slide lathe, by Collier, with 18 ft. 6 in. bed; a 15 in. centre self-acting screw-cutting lathe, with 15 ft. bed, and a 10 in. centre self-acting screw-cutting lathe, with 20 ft. bed, both by Paw, Curtis, and Madeley; a 12 in. centre, double-gear, self-acting lathe, by Davis, Leeds; a 7 in. centre self-acting screw-cutting lathe, with 10 ft. bed, by Collier; a strong 12 in. self-acting, double-gear lathe, by Fox, with 12 ft. bed; a very powerful self-acting lathe, with 7 ft. 6 in. bed, and 2 in. face plates, capable of facing surfaces 12 ft. and 8 ft. diameter; self-acting boring bars; 6 strong lathes, for facing and boring railway wheels; 4 pairs of 8 in. 9 in., and 10 in. centred back-gear head stocks, with wood beds; 1 pair of 8 in. single geared head stocks; an 8 in. centre lathe, with 6 ft. bed; a self-acting planing machine, by Whitworth, will plane a surface 8 ft. long and 3 ft. wide; a very strong, self-acting, vertical drilling machine, by Smith, Beacock, and Tannett; a self-acting shaping machine, with 10 in. stroke, by same makers; slotting machine, screwing machine, to screw up to 1 1/2 in. 3 wall drilling machine, key cutting machine, and other tools; 350 ft. of turned wrought-iron shafting, from 2 1/2 in. to 4 1/2 in.; riggers wheels, drums, and driving gear; 2000 ft. leather bands, 50 vices, work benches, 3 tons cast-steel tools, sets of Whitworth's taps and dies, with stocks, gauges, 10 cwt. cast-steel chisels, 12 smith's forges, 20 anvils, several tons of smith's tools, 10 ton over-head traveller, powerful foundry jib crane, crane, shank, and hand ladles, 4 wrought-iron copulas, stove trucks, erection of core stove, griststones, crabs; set of 10 ton shear legs, with crab; 10 ton wharf crane, punching and shearing machine, loam mill, wagon, cart, plate and angle iron furnace, shaping press, and other tools, and sundries, to be sold, at 6d. each (without which no person will be admitted), may be had of Messrs. HUGHES, KEARNEY, and MASTERMAN, solicitors, Bucksbury, E.C.; of Messrs. W. MURRAY, SON, and HUGHES, solicitors, Birchenhead, E.C. (date 11, London-street); of Messrs. TUNNICLIFFE and YOUNG, Old Jewry-chambers, E.C.; and of Messrs. FULLER and HORSEY, Billiter-street, London, E.C.

MESSRS. FULLER AND HORSEY are instructed by Messrs. B. Bosvill and Sons to SELL, BY AUCTION, on Thursday, the 25th day of March next, at Twelve, at Messrs. Swayne and Bosvill's Works, Millwall, Poplar, in lots, SIX very powerful HORIZONTAL HYDRAULIC PRESSES, made by Messrs. Swayne and Bosvill, for compressing hay, and used but for a short period only; each press is double acting, having a cylinder at either end, with 12 in. ram and pumps; there are four 2 1/2 in. square thread set screws to each press, with brass nuts, and the opening between the two ends is 12 ft. 6 in. long, by 3 ft. 6 in. wide; there are rollers to each for hooping the bales. The presses are made of Stirling's patent iron, well fitted, and in good order. Also, at the same time will be sold, about TEN LOADS of SOUND SQUARED TIMBER, used as framing to carry the presses, and ONE CUTTING MACHINE.

MESSRS. FULLER AND HORSEY are instructed by the Inspectors of the Estate of Messrs. Swayne and Bosvill to SELL, BY AUCTION, with the other machinery, Millwall, Poplar, THREE STEAM-ENGINES and BOILERS, including a new double cylinder, high-pressure, and condensing Steam Beam Engine, with 16 in. and 32 in. cylinders, equal to 70-horse power, made by Messrs. Swayne and Bosvill; also, a double cylinder Steam Beam Engine (Siemens's Patent), equal to 80-horse power; a 16-horse power high-pressure Beam Engine, Donkey Pumping Engine, two Cornish Boilers, each 25 ft. long, 7 ft. diam., one fitted with two tubes, the other with one large tapering tube, steam-pipes, valves, and connections, and the brick flues.—To be viewed with the other effects. See preceding advertisement.

MR. WHEATLEY KIRK very respectfully announces that he is favoured with instructions from the proprietor, who is declining the business, on account of his intended change of residence, to SELL BY AUCTION, on Thursday, Feb. 25, 1858, on the premises of the said works known as the WIDNES OIL WORKS, Runcorn Gap, near St. Helens and Warrington, Lancashire, viz:—ALL that PLOT or PARCEL of LAND containing, by admeasurement, 2712 square yards, or thereabouts, be the same more or less, which is leased for an unexpired term of 67 years, at the low rental of £30 per annum, from the St. Helens Railway and Canal Company, upon which are erected three exceedingly valuable works, the whole being upon the said line of railway and canal, thus affording the most facilities for transport of goods to and from London, Liverpool, and Manchester, the coal and iron districts, and indeed all parts of the kingdom or abroad.

IRELAND.—Mr. WHEATLEY KIRK is instructed to PREPARE FOR SALE, BY AUCTION, the whole of that exceedingly valuable FOUNDRY and ENGINEERING ESTABLISHMENT, LAND, BUILDINGS, TOOLS, PLANT, and MACHINERY, known as the SHANNON FOUNDRY, Limerick, Ireland.—Further particulars in future papers, or of the auctioneer.

STEAM-ENGINES OF EVERY DESCRIPTION, including BEAM, CONDENSING, or HIGH-PRESSURE, HORIZONTAL or VERTICAL; also, LOCOMOTIVES, BOILERS, ENGINEERS' TOOLS, RAILWAY, COLLIERY, or OTHER PLANT and MACHINERY, may be had on the shortest notice, on application to Messrs. W. & A. G. R. merchant engineer, auctioneer, and valuer, Cross-street Chambers, Manchester.

SOUTH WALES.—Mr. ARTHUR O. DAVIES, of Dowlais, is authorised to TREAT for the SALE of TWO VERY VALUABLE GOING COLLIERIES in South Wales.

PONTERWYD SILVER-LEAD MINE TO BE DISPOSED OF.—This mine is situated in the centre of a good mineral district, 11 miles from Aberystwyth, the coach road to Rhayader running through a part of the sett. The sett is divided into 2948 shares; £3 10s. per share have been expended on it.

SPHALTE OR PITCH, 4s. per ton; TAR OIL, 2d. per gallon; COMPOSITION TO PREVENT RUST IN STEAM BOILERS, 10d. per gal.; at JNO. METCALF'S, Miles Platting Chemical Works, Manchester.

TO SCREW AND RIVET MAKERS, &c.—TO BE SOLD, BY PRIVATE CONTRACT, A LEASEHOLD MILL, SHOPS, and MANUFACTORY, with STEAM-ENGINE and valuable well-adapted MACHINERY for the MANUFACTURE OF RIVETS, COPPER BOAT NAILS, &c.; also, a VALUABLE PATENT connected therewith. The property and machinery are new and in working order, and a good trade has been established.

TO CONTRACTORS AND OTHERS.—FOR SALE, BY PRIVATE TREATY, A LOCOMOTIVE TANK ENGINE, nearly new; 143 EARTH WAGONS, 5 DOBBIN CARTS, in good working condition; 25 tons CONTRACT OIL, 42 lbs. per yard.—For further particulars, apply to G. S. FOLLOCK, Aire and Calder Wharf, Leeds.

SILVER BROOK MINE, NEAR ASHBURTON, DEVON.—This very valuable and extensive SETT, situated in the parish of Hisington, Devon, is NOW OPEN FOR COMPETITION to any parties desirous of re-working the same. The advantages this mine offers are well worth consideration. An excellent 20 in. pumping engine, hauling engine, and crusher, are now on the mine, and fit for immediate use, which might be purchased at a great sacrifice. All operations underground and at the surface have been carried on in the most approved plans; engine-shaft sunk 85 fms. from the surface, and levels driven considerable distances north-east and south-west on the course of the lode, from which about £5000 worth of lead and zinc have been raised and sold. In the last few fathoms driving, in the 22 ft. level north-east, the nature of the lode changed from a hornblende character to that of a beautiful gossan and fluor-spar; this level is driven under a hill, leaving 40 fms. back. An east and west lode, of a copper-bearing character, and producing fine stones of gossan, with quartz and mauls, was discovered a few weeks previous to the mine being abandoned; and the 22 ft. level south-west, if driven a further distance of 30 fms. would prove the lead lode, and intersect the copper lode at a depth of 50 fms. from the surface; thus a valuable mine can easily be kept open.—Application for the above to be made to Messrs. D'ANCI and BEACHEY, solicitors, Newton Abbot, Devon.—Dated Newton Abbot, Feb. 10, 1858.

LEAD MINE.—TO BE LET, the GLENGOLA LEAD MINE, in which there is a nice show of lead at the lowest sinking—about 20 fms. There is an overshot WATER-WHEEL, 18 ft. in diameter, having a good supply of water to work the pumps; there is also a horse-wheel, cottage for a captain, office, stable, magazine, smithy, carpenter's workshop, store, and two dressing floors. The mine is within 1 1/2 mile of the quay at Oughterard, from whence the ore can be conveyed by water (16 miles) to the Port of Galway. The sett contains 963 acres, consisting of about 140 acres.—Apply to G. F. O'FLAHERTY, Esq., Lemonfield, Oughterard, Ireland.

IMPORTANT SLATE QUARRY, FESTINIOG, NORTH WALES.—TO BE SOLD, BY PRIVATE CONTRACT, a well-established SLATE QUARRY, with the PLANT and OTHER APPARATUS for working it. Also, the FREEHOLD FARM and LANDS whereon the quarry is worked, free of all royalty, consisting of about 140 acres.

STAFFORDSHIRE.—HAY HEAD HYDRAULIC LIME.—TO BE LET, ON ROYALTY, the valuable MINE of HYDRAULIC LIME, known as HAY HEAD, near Walsall. The works are situated on a branch of the Birmingham Canal, by means of which a ready communication may be had with the Midlands districts and with London. The lime is well known in the neighbourhood, and has been selected, in preference to all others, for exclusive use in the very extensive works now in progress in the Netherton Tunnel, near Dudley, by means of which the Birmingham Canal is to be carried underground for 3600 yards. The works are very complete. There are two shafts and a 25-horse high-pressure engine, with the necessary pumping and winding gear. The kilns are close to the canal. The plant is to be taken at a valuation.—For further particulars, apply to Mr. ADAMS, Aldridge, near Walsall.

DUSTON IRON ORE COMPANY (LIMITED).—The shareholders of the above company are informed that the Directors have this day made a FURTHER CALL of TWO SHILLINGS and SIXPENCE per share on each and every share of the company, payable at their bankers, either the London and County Bank, Lombard-street, London; or the Northamptonshire Banking Company, Northampton; on or before the 20th day of April next.

EAST INDIAN IRON COMPANY.—Incorporated by Royal Charter. Notice is hereby given, that the FIFTH ANNUAL GENERAL MEETING of the East Indian Iron Company will be held at the offices of the company, 3, Austin Friars, London, E.C., on Friday, the 19th day of February inst., at Half-past One o'clock p.m. precisely, in conformity with the terms of the Company's Charter and Deed of Settlement.

LYDFORD CONSOLS MINE.—The Committee, having received several enquiries, with a view to the purchase of this sett, with the machinery and materials thereon, hereby give notice, that they will receive TENDERS for the same up to Twelve o'clock on Wednesday, the 17th inst. Terms cash; or a deposit of 20 per cent., and approved bills to two and three months. The committee invite parties to inspect the articles, for which orders will be given on application.

CHOLLACOTT CONSOLS MINES.—I hereby give notice, that the whole of the PROCEEDINGS of the MEETING held at 57, Old Broad-street, E.C., on the 24th February inst., WHERE HILL and others, of no effect; and I hereby CAUTION the holders of shares against paying any money to Mr. James Carpenter, or any other person, on account of any alleged call proposed to be made at such meeting.

GREAT TREGUNE CONSOLS.—A SPECIAL GENERAL MEETING of adventurers in this mine will be held at the offices of the auctioneer, Francis Hobbs, Esq., No. 26, Bucksbury, Mansion House, on Tuesday, the 16th February inst., at Half-past Two o'clock. Chair to be taken at Three o'clock precisely.

MARIQUITA AND NEW GRANADA MINING COMPANY.—THE FIFTH HALF-YEARLY DIVIDEND OF ONE SHILLING per share is now PAYABLE at the office of the company, on Mondays, Wednesdays, and Fridays, between the hours of Eleven and Four.

CILARENDON CONSOLIDATED MINING COMPANY OF JAMAICA (LIMITED).—Notice is hereby given, that the FIFTH ANNUAL GENERAL MEETING of the Cilarendon Consolidated Mining Company of Jamaica will be held at the London Tavern, Bishopsgate-street, in the City of London, on Friday, the 19th day of February inst., at Twelve for One o'clock precisely, in conformity with the terms of the Company's Deed of Settlement.

ROYAL SANTIAGO MINING COMPANY.—The Directors hereby give notice, that they expect to receive from the managers of the mines about the middle of next month information which may be of importance to the shareholders, and, consequently, they have POSTPONED the usual HALF-YEARLY MEETING until WEDNESDAY, the 3rd day of March next, to be then HELD at the office of the company, at Two o'clock precisely, when the directors will make their report.

IT IS IMPOSSIBLE TO INJURE A BOILER FROM SHORTNESS OF WATER with one of my PATENT DOUBLE DISCHARGE 4 in. SAFETY VALVES, with FLOAT attached, to open when the water goes down.

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UNITED STATES OF AMERICA.—DUPEE, PERKINS, and SAYLES, BOSTON, MASSACHUSETTS, BROKERS for the PURCHASE and SALE of STATE, CITY, and RAILROAD SECURITIES, MANUFACTURING and BANK SHARES, give particular attention to the MINING COMPANIES OF LAKE SUPERIOR, and furnish reliable information concerning them.

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GOVERNMENT SCHOOL OF MINES,
JERMYN STREET.
THE following COURSES OF LECTURES are about to be COMMENCED:—
THIRTY LECTURES ON GEOLOGY, by Prof. RAMSAY, F.R.S.; to be delivered on Mondays, Tuesdays, and Wednesdays, at Two P.M., commencing on Monday, the 15th inst. Fee for the Course, £1 10s.
THIRTY LECTURES ON MINERALOGY, by Mr. T. H. HENRY, F.R.S.; to be delivered on Mondays, Tuesdays, and Wednesdays, at Three P.M., commencing on Monday, the 15th inst. Fee for the Course, £2.
THIRTY LECTURES ON NATURAL HISTORY, of the Principles of Zoology, Comparative Anatomy, and Paleontology, by Prof. HUXLEY, F.R.S.; to be delivered on Mondays, Thursdays, and Fridays, at Ten A.M., commencing on Wednesday, the 17th inst. Fee for the Course, £2.
THIRTY-SIX LECTURES ON APPLIED MECHANICS, by Prof. WILLIS, M.A., F.R.S.; to be delivered on Wednesdays, Thursdays, and Fridays, at Twelve o'clock, commencing on Wednesday, the 17th inst. Fee for the Course, £2.
Tickets and prospectuses of the school may be had on application to
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NEW PATENT ACT, 1852.—MR. CAMPIN, having advocated Patent Law Reform before the Government and Legislature, and in the pages of the Mining Journal, &c., is now READY TO ADVISE AND ASSIST INVENTORS IN OBTAINING PATENTS, &c., under the NEW ACT.
The Circular of Information, gratis, on application to the Patent Office and Design Registry, 156, Strand.

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Mr. Denman now supplies these wines at 20s. per dozen; and, as it is our rule not to supply in commendation of articles of which we are ignorant, it gives us much pleasure to recommend of articles of which we are sure.—John Bull, Jan. 17, 1857.
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The Danksirk Coal Company, 2 cages.
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Lord Vernon, Poynton Colliery, near Stockport, 11 cages.
The Bardsley Colliery Company, near Ashton-under-Lyne, 4 cages.
Messrs. Clayton and Brooks, near Stockport, 1 cage.
Messrs. Aspley and Bedford Colliery, Messrs. S. Jackson and Co., near Leigh, 10 cages.
Messrs. Knowles, near Manchester, all.
Messrs. Lees, Jones, and Co., Oldham, 2 cages.
Messrs. Thos. Wright and Co., Little Hulton, 4 cages.
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